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In The Heart Of The Northern Forests



An interestingly posed Group of Rocky Mountain Sheep.

IN THE HEART OF THE NORTHERN FORESTS

By

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**IN THE HEART
OF THE NORTHERN FORESTS**

Chapter I

The Wonders of Beaver Engineering

OF all animals that I have ever had an opportunity of knowing in their wild state, none can compare with the insignificant-looking beaver in point of interest. It is perhaps because their work bears some relation to that which is done by man that they are so fascinating, for they work out problems more or less like our own, and their problems are frequently of a complicated nature which might well defy the ability of untrained man. Then again, another feature of the work accomplished by the beaver is that it has been of direct benefit to the human being, and I can think of no other wild animal of which this can be said. Wild beasts of many kinds have been trained to do work for man, under his supervision, but that is a totally different point. Wild elephants are caught and trained to accomplish feats of strength and skill; llamas, reindeer and others become our servants; but none of them in their natural state does anything that is of value to us.

Therefore it may be fairly said the beaver stands alone as having actually had an effect on our lives. In what way this has come about I shall explain

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Hiawatha, in Longfellow's own words, and it was so utterly different from the Hiawatha that *I* had read; a thousand times more beautiful, for were not the settings perfect? The dark forest trees, touched here and there by the glow of the fire, the same glow that painted the strong face of the Indian till it seemed scarcely real; and near by was the murmuring of the ocean-bound river, swirling gently against the impeding rocks and lightly caressing the overhanging bank; and that was the accompaniment to the story of the Indian maid and of the beaver Ahmeek. Certainly no one has ever heard Hiawatha given under more wonderful conditions, and after all the years that have passed since then, nearly a third of a century, it still remains as fresh in my memory as though it was but yesterday.

Our long canoe trip, varied by portages and strolls through the autumn-coloured forest, was in a way sad. Go where we might, there was always the same pitiful story, the story of the ruthlessness of the trapper. Again and again we found what recently had been beaver colonies, where once the hard-working animals had laboured so industriously to make homes, and now were deserted. Nothing more desolate can be imagined than these abandoned ponds, with their grey ruined lodges, their overgrown and broken dams surrounded by the bleached trunks of dead trees standing or lying prostrate in the slowly draining lake; somehow they call to mind the shell-torn villages so painfully numerous

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in the war area. Except for muskrats, occasional birds and perhaps a deer or two, there was no sign of life.

For a long time our search was unproductive, but at last, far to the north, two days' canoeing and a several hours' walk brought us to a small beaver colony which was apparently new, for there were freshly built lodges and dams and recently cut trees, and peeled white sticks floating on the water; and these were the first I had ever seen. Needless to say I was thrilled, and utilized the opportunity to the utmost by making photographs, sketches and notes.

What I had observed only whetted my appetite, and I determined to make a careful study of the strange animals and their work, as I was more than ever convinced that there was a fund of extremely interesting material to be collected. How much work it would require I did not then know, but during the following fifteen years all my available time was devoted to it; and during these years I travelled many, many miles by canoe and on foot, in Canada and Newfoundland, and spent innumerable nights and days watching and studying the ways of the beaver.

In the earlier years the work was handicapped seriously by the appalling amount of trapping that was then being done. But, thanks to the vigorous efforts that were made, protective laws were passed and the beaver, none too soon, were saved from what might easily have been complete extermination; a few years

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later and it would have been too late. The result of prolonged close seasons in the various parts of the country produced effects that were more encouraging than even the most sanguine among us would have dared to expect. For example: in parts of Newfoundland I can remember when during a long day's canoe trip I found traces of but a single beaver, and when I revisited the same district a few years later I counted nearly a dozen thriving colonies. What was true there was true also to a greater or lesser degree elsewhere. Nearly all reports were satisfactory; so it was that the beaver, the emblem of Canada, was saved.

The work of the little engineers is to-day a source of delight and interest to those who enjoy wandering through the wilds, and just as in the case of seeing the animals and birds in their native surroundings, the pleasure of man is increased a thousandfold. The most beautiful country is made even more beautiful by the presence of wild creatures, especially when they are so carefully protected that they no longer regard the human being as an object of dread, something to be avoided at all cost: a thing which will, only too frequently, kill simply to satisfy the lust of blood.

Beaver have, for ages, been persecuted by trappers, consequently they have become almost entirely nocturnal in their habits, seldom venturing out into the open until the dim twilight has settled on the land. From then until sunrise they feel reasonably safe, and



Beaver caught by Flashlight while repairing Lodge.



Flashlight of Beaver repairing a Break in a Dam: note how Stick is being carried.

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during these hours their work is accomplished. Once the sun appears they retire to their houses or burrows to sleep. Hence it will be seen that studying the animals is no easy task; only occasionally is there an opportunity for watching them by the dull evening light or in the early morning, or again by the elusive light of the moon. This is true everywhere, except in places where they have been so carefully protected that they have lost their sense of fear.

In appearance the beaver can scarcely be said to be interesting or handsome; they have little in the way of shape or grace, being somewhat like a gigantic muskrat, usually the colour is rich dark brown of various shades, with small black front feet and large partly webbed hind ones, on each of which is a serrated or finely toothed toe-nail which is used for combing the thick fur and hair. The tail, which is the most characteristic feature, is broad and long, fairly thick, and covered with a scale-like tough skin from which a few scattered hairs grow. The common idea and one dwelt upon by many unobservant observers, who delight in trying to make nature even more wonderful than it happens to be, is that the tail is used as an instrument for plastering and beating down mud and also for carrying building material. From all I have been able to discover there is not the slightest foundation for these ideas. I have examined a great many newly-plastered lodges and dams and so far have never seen anything that looked

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like the impression of the tail. Actually it is used chiefly as a means of balancing when standing in a more or less erect position to work, and as a method of signalling by slapping the water, as described later on. Another feature of the beaver is the tooth development, but chiefly by their size are they in any way peculiar to the species; and after all they are only in proportion to the animal itself, which reaches a weight of sixty pounds or more. Otherwise they are similar to those of many other rodents, though their colour, which is deep orange, is a little more intense. The extreme sharpness of these cutting teeth is accomplished automatically by the working together of the upper and lower pairs. The front edge is of very hard dark enamel, backed by supporting softer white dentine. The grinding teeth are strangely foliated. This brief description of the animal will be sufficient, I trust, to give an idea of its appearance to those who have never seen them in zoos or other places. The male and female look exactly alike, a fact that has sometimes been overlooked by writers. In their habits the beavers are semi-aquatic. They are thoroughly at home in the water and on land. They swim well and rapidly, and are able to remain below the surface for several minutes.

Let us now see how a beaver colony is started, and as a typical example I shall take one that I watched in Canada some years ago.

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There was a narrow valley, perhaps two hundred and fifty yards in width, covered with an abundant growth of poplars and birches, and bordering the small stream there were willows and alders. On either side of this valley the hills rose to a considerable height and were covered with spruces, pines, large paper birches, maples, and, on the higher parts, beech trees. It was a lovely spot, and when I saw it in early autumn the foliage was beginning to turn various shades of red, yellow and orange: a glorious assortment of colours made doubly brilliant by contrast with the deep green background of the conifers.

Into this secluded valley the beaver had come earlier in the season, and, having investigated the possibilities of the place and found conditions apparently quite satisfactory, had decided to establish themselves. The stream, which was not more than fifteen or twenty feet in width, moved slowly between its grassy, bush-covered banks. Its depth at that time of the year was scarcely over two feet, and the bottom was mud over gravel.

The first task of the engineers was to select a suitable site for the dam, the most important thing in connection with the making of a colony. A few straggling branches of alders were cut and brought to the selected place and laid in the water, with the butts pointing against the current. Then more and more branches were added until, across the bed of the stream there was a rough untidy mass through which the water ran

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more or less freely. On the lighter branches logs, eight to ten feet in length and up to twenty inches or more in circumference, were laid; these of course weighted down the thinner material, but still did not offer much resistance to the flow of water. This was the next consideration, and I was interested to note the method employed: large sods were cut and rolled down stream, or, if small enough, carried in the front paws under the chin and placed against the mass of sticks and branches. The current forced these into position. More and more sod and rubbish was added until it made a solid obstruction to the water, which rose gradually to the top of the natural banks; and as it rose, more logs and sticks and sods were added until at the end of about a week the stream was blocked and overflowed its banks. When this happened the length of the dam was increased until at last it was fully forty feet in length and perhaps four feet high where the water was deepest. This caused the flooding of a fair-sized area and made a pond nearly a hundred feet wide and about three times as long, large enough for the beginning of a colony.

So far as I could judge there were only four beaver doing this work, though of this it was difficult to be absolutely sure, as they never appeared all together. One or two were usually seen at the same time.

In watching the operations there was the utmost difficulty, even by moonlight, as clouds always found

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a strange fascination in the moon and insisted on staying between it and me whenever there was anything particularly interesting being done. Then, too, the wind did not always behave as a wind should, and instead of blowing in one direction so that I could select a suitable hiding-place, it would change its mind and direction repeatedly, invariably choosing the wrong moment for blowing gently from me to the dam, when, needless to say, all operations ceased as though by magic; for the scent of the human being, no matter how good his intentions may be, is feared and hated by the beaver. Only too well do they know what it may mean. The long years of experience, going back for many, many generations, have taught the lesson just as they have taught the animals to do their remarkable feats of engineering. Inherited knowledge is one of the strangest of all things, and we call it instinct for lack of a better term.

Once the dam was practically completed, and with its completion the pond had come into being, the next step was to indulge in house-building. When we build our dwellings we make carefully considered plans, and with measures and tools work out our design. Most of us, if told to erect even the simplest of structures, with or without implements, would make a sad mess of it. Not so the beaver; he goes to work with a very definite idea of what is required, and those that we are watching were true to type. They seemed to know

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exactly what to do; first of all two sites were chosen, and there appeared to have been an argument at this point, because in one place work was begun and soon abandoned. The reason for this was never published, but that there was a good and sufficient one I have not the slightest doubt. Both of the houses, or lodges, as they are commonly called, were built on grassy islands, not far apart, and made by the rising of the water. On each island a mound of sticks, both peeled and unpeeled, and sod was placed.

When completed these rough-looking hummocks were about five feet high and approximately seventeen feet in diameter. There was nothing beautiful about them, and to the casual eye they appeared to be nothing more than purposeless heaps of rubbish to be passed unnoticed. In reality they were thoroughly well made; the interlacing of sticks, apparently so haphazard, was cleverly done, and the sod and earth and fibrous roots bound the whole thing together most perfectly.

By what method the inside of the lodge was done I can only surmise, in spite of every effort made to secure precise information. What appears to happen is this: burrows, one or two, are made three or four feet, or even more, below the surface of the water, and these lead into the mound of earth and sticks. A chamber is then hollowed out, its size varying according to the number of animals that are to live in the house.



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I have examined a number of deserted lodges and always found that the interior, which is quite smooth, showed by the way the sticks and roots were cut that this must have been the method employed. Certainly I have never seen any evidence to show that the walls and roof were made to enclose the room. Another feature which has always puzzled me is how the flue or ventilating chimney is made. It exists in every house I have seen, and its construction is both simple and ingenious: sticks are closely interlaced with no sod or mud to interfere with the free passage of air. Unfortunately for the clever little architects this flue is only too frequently a source of danger. During the winter months when the house is covered with snow and looks like a slight inequality in the hidden ground, there may be seen a thin haze like an almost imperceptible column of smoke rising from the flue, the result of the heat generated inside the lodge by the beavers' bodies and breath. In this way the trapper finds where the animals are and is able to carry on his gruesome work.

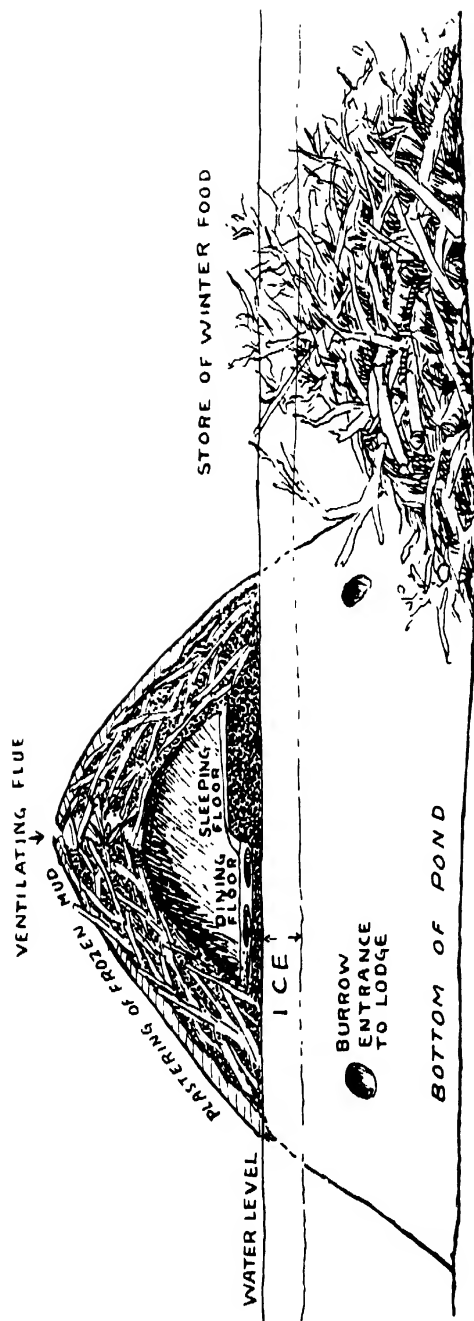
Inside the house the main floor, which is used as the dining and drying room and has a smooth mud flooring into which small sticks and roots are pressed, is only two or three inches above the water level, and in this part are the burrows, one, two or three, according to the size of the room, which lead out well below the bottom of whatever thickness the ice may be. How do the little creatures know that there will be two

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feet or more of ice, and make their arrangements with this in view? It is a strange example of having knowledge which enables them to anticipate a condition which will exist in the future, but of which there is no evidence at the time of the building operations. Besides the dining-room, or floor, there is another more or less defined level, a few inches higher, which is the 'bed-room'. It is not partitioned, but is covered with bedding composed of grass or shredded wood. If possible, cedar is used, apparently because it is not liked by certain insects which are peculiar to the beaver. The wood is torn into fine fibrous strips varying in length up to eight or ten inches.

The appearance of the completed lodge may be seen by the accompanying illustrations, and it may be noted that in no way do they resemble some of the old-fashioned drawings which show the house as perfectly smooth and rounded and with *square* windows. The fact that the windows are square is in itself an absurdity, as animals do not use rectangular forms in any of their work. Then the windows themselves are equally ridiculous, because they would defeat the whole idea of the protective value of the house, as there would be nothing to prevent enemies entering.

The houses vary greatly; some being built chiefly of roots and sod are comparatively smooth and tidy, others are covered with long sticks and others again may have quite large logs used in their construction.



Section of Beaver Lodge with Floor Levels and Entrances and, on the right, the Pile of Sticks and Logs for Winter Food.

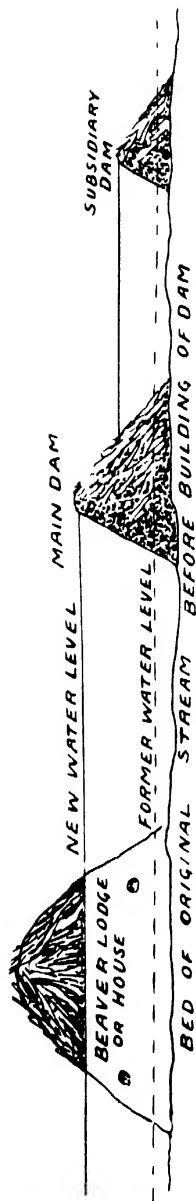


Diagram of Stream dammed by Beaver, showing rise of Water Level in Main Pond and Small Pond, made by Subsidiary Dam as protection to the Main Structure.

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As they vary in form so also do they vary in size from six or eight up to as much as thirty-seven feet in diameter (the largest I have ever found). Those that are very large contain, I believe, two or even three more or less distinct chambers and house several families; though frankly I have never had the heart to open them, as when I found these unusually ambitious buildings it was always late in the season, when the animals would not have had time to build fresh homes and consequently would be forced to spend the winter in burrows, with probably disastrous results. So my belief in the several chambers is based on the presumption that the architectural ability of the beaver is not sufficient to enable them to cope with the problem of supporting a roof which would give a room large enough to contain the number of animals that would live in such a lodge.

Before returning to the colony in the making, it might be well to explain the *reason* for building dams, a subject which I find is seldom treated in other writings. The authors probably know and conclude, as so often happens, that others also know, and yet I find that it is a question which people usually ask. As already stated, the floor of the lodge is only a few inches clear of the water, while the entrance burrows or tunnels are several feet lower; the purpose being the safeguarding of the inmates from unwelcome visitors.

It is essential that these entrances shall be always

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submerged, whether in dry weather or during floods; also, that in the event of floods, the floor shall still be dry. The only possible way to secure the essential constant level of the water at all seasons is by means of a dam. This is the obvious and most important reason for their being built, but besides protecting and isolating the house they serve other purposes. Water transport, as man has long known, has many advantages. For the beaver it is a necessity, not alone because of the ease with which logs and branches may be floated to wherever they are required; but the beaver, being a completely defenceless animal with many natural enemies, such as wolves, foxes, wolverines and others, is entirely at the mercy of any of these when on land. Consequently he prefers to remain always in or near water in which he feels safe against everything save the trapper.

Still another reason for the forming of a pond is to have a safe place in which to store the winter supply of food that is brought close to the lodge and there sunk, by some means unknown to us, to be used as required when the country is covered with snow and ice. During this period the beaver is imprisoned by the frozen lake. He comes out only under water, selects a suitable stick, takes it through the tunnel into the lodge and eats the bark at his leisure; after which the peeled branch is taken out and left under the ice, to be used during the following season for



Lodge built on Bank of River, with Winter Food-supply shown on right, in Water.

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building material. All of which goes to show that the dam is of vital importance in the forming of a beaver village.

The reader, if he knows a little about the subject, may say, "But all beaver do not build dams." This is perfectly true. I might even say, unfortunately true, for the results are by no means satisfactory. I have seen many examples of lodges being built on the banks of large rivers. I have also seen these rivers in flood, with most disastrous results. The houses, even when completely submerged, have seldom been washed away owing to the solidity of their construction; but they have been seriously damaged and the wretched inmates driven out to seek insecure shelter in banks above water level. In some instances the carefully collected supply of wood was washed away.

Again we find that a colony will be established in a permanent pond, such as those to be seen in the barren lands of Newfoundland. The lodge may be built on an island or on the bank. The water level of these small lakes varies very slightly throughout the year, consequently neither floods nor droughts cause much uneasiness. Sometimes these ponds are miles away from trees, so that instead of the usual food, which is bark, the roots of the aquatic plants such as water-lilies or the yellow spatter-dock are used. These do not have to be stored, as when the animals want a meal they go under the ice, the burrows being invariably

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all, by causing a pond to form it would protect the base of the main work from the action of the frost, the effect of which would be to cause it to 'heave', with probably bad results. Second, in case the larger dam broke, the animals would still have water in which to seek protection. In some instances I have found a series of as many as six or seven of these smaller dams of decreasing size as they were further from the pond. The higher the main structure is the more important does it seem that protection should be given to it. This again is an excellent example of forethought, of preparing against an eventuality which *may* occur.

By the time the subsidiary dam was completed it was time to begin collecting the food supply for winter. Being new country, with an abundance of small trees, there was no necessity for cutting anything larger than about two and a half feet in circumference; in fact, most of the trees selected were much smaller. Poplars and birch were the most sought after, but mountain ash, alders and sometimes maple were also used. Where these grew on the land which had not been flooded a path was carefully cleared so that branches and trunks could be carried to the water with the least possible effort. It is difficult to say exactly how long it takes to cut down a tree, say, of twelve inches in diameter, because work was seldom carried on continuously; but I imagine from what I have seen that one night would be sufficient, if one animal worked more or less per-



with Mud.



Unusual Type of Beaver Lodge, far from Trees. The animals probably relied on
Roots of Spatterdock for Winter Food.

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sistently. Small trees or saplings are cut through in a surprisingly short time. Once they are down they are first trimmed of their branches and then the trunk is cut into lengths which vary according to the size.

I have never seen logs of more than a foot in diameter used, and these were cut into lengths of about two feet; whereas those of six inches would be between five and eight feet long. Short logs are rolled along the ground; thin ones and branches are carried in the front paws and mouth while the animal walks on the hind feet. Once in the water they are easily towed to the edge of the lodge and sunk to the bottom. How this is accomplished I have never been able to ascertain. Trappers have told me, in quite good faith, that the beaver *sucks the air out of the wood* so that it sinks. It is a wonderful idea, but, like many of the stories connected with beaver, it is based on fancy rather than fact.

I found it interesting to watch the speed with which the wood pile grew. Load after load was hauled through the water in rapid succession and on arriving at the pile the beaver would disappear and take the branch with him. Sometimes the whole mass would quiver slightly, as though there was some vigorous packing being done under water, and soon after, the animal would reappear and quickly go in search of another lot. In the end the woodpile covered quite a large area, perhaps fifteen or twenty feet across,

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but only the thin ends of branches showed above the surface.

The weather had changed a good deal during the weeks in which I had watched the establishing of the colony's winter quarters. The trees had lost their gorgeous yellow, orange and scarlet foliage. Only here and there was there any brilliant colour left. Autumn had almost gone and the increasingly cold nights told of the approach of winter, and warned the beaver that it was now time to attend to their last important task before settling down for the five months or so of snow and ice. The final touches had been given to the dam, a log here and there, or a large lump of sod in some place that looked weak, and then came the finishing of the lodge. As it stood, wolves or other animals might be able to tear an opening through the walls, so to prevent this the whole structure was heavily coated with mud. This froze into a solid mass of ice and made it proof against the attacks of any enemy but man.

Some writers have questioned whether this mud plastering is really done, saying that they have never actually seen it; obviously because they did not wait long enough, they left the beaver lodge before it was time for the work to be done. Not only have I seen the freshly mud-coated houses but I have photographed them, so I can vouch for the accuracy of my statement. To my mind this is an extraordinary example of the

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animals' cleverness and intelligence. Not so much the mere coating of the house with soft mud, which, after all, is no more wonderful than any other part of the building operations, but that they should delay doing this plastering until they are sure that it will freeze quickly; a most important point, because if it was put on too soon the rain, which is frequent in the late autumn, would very soon wash it off and all the labour would be wasted. How they know when it is going to freeze sufficiently hard is one of the questions to which an answer is difficult to find.

When I said good-bye to the newly established colony, ice had already begun to form on the pond and the trees had shed their leaves. The only rich colouring that remained was in the low-growing scrub among the coarse yellow grass, and where a carpet of fallen leaves was collected by the eddying winds. The beaver were still coming ashore to feed, and sometimes while it was still daylight on those grey autumn late afternoons I saw the little animals bringing branches to add to their winter supply.

A fall of snow warned me that it was time to be going, and when I left the land was white; the beaver lodge a mere snow-covered mound in which for the next few months the animals would live in comfort, thanks to their own tireless labour and skill. The temperature might drop to thirty or forty degrees below zero, blizzards might rage and spread havoc

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throughout the country, but they would not be affected in their cosy home. Other inhabitants of the wilds might go hungry, might even starve to death, but they would be fed, thanks to their own foresight. They had provided against every emergency except, of course, man; he alone was a source of danger and one so clever and persistent that he defied all their methods for protecting themselves.

With the finishing of winter, when the snow begins to melt and the ice breaks up, and streams become raging torrents filled with masses of discoloured ice that tear their way against rocks and overhanging bushes and trees, there is danger that the well-constructed dam may break, for the pressure of the water and ice against it becomes terrific; but it will probably withstand the onslaught, and gradually the pond will free itself from the embrace of winter.

At this time the beaver will bring forth their young, small furry kittens, four or five in number, and they will remain in their homes until the rapidly increasing warmth of the sun causes the trees and bushes to change from cold grey to rich purples and then to the various shades of delicate green. On warm spring days the youngsters will venture out to play in the water under the watchful eyes of their parents. They will sun themselves on the grassy islands and grow with surprising speed, if they are fortunate enough to escape their various enemies.

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Throughout the spring and summer months the life of the colony is a life of lazy pleasure. They eat, they sleep and they play; but only on rare occasions does one see them by daylight. Many, many hours have I spent hidden near a pond in the hope of seeing something of the family life; but very rarely have I been rewarded, for the fathers and mothers are ever on the alert, and take no chances. As a rule it has been quite late in the afternoon when I have seen the animals, usually after the sun has gone down below the tree-tops. Then, when the pond looks like a sheet of gold with still reflections of the surrounding trees clearly mirrored in the placid water, the beaver may come out. At this time they are more likely to be living in burrows than in the houses, so they may appear from anywhere.

I recall one evening when I lay behind a log, not far from the edge of the water, and watched for my friends to come out. It was an evening when the sky was a blaze of glorious colour. Not a breeze stirred, everything was so absolutely quiet that I could hear my own heart-beats. A red-coated doe with her spotted fawn came silently through the forest on the opposite shore, and not a sound did they make until they began to feed on the water's edge, and the gentle splashing of their feet as they moved along was the only break in the perfect quiet; that and the occasional evening song of a hermit thrush or some other

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bird. In vain did I search the pond for any sign of beaver; several muskrats moved about in their busy way, always as though they had some important task to perform, a task which must be done in a very great hurry.

As I lay there I wondered whether by chance the beaver had got my scent; if so, of course, they would remain under cover, and as I wondered and watched there was a sudden crash as though a gun had been fired. In the overpowering stillness of the evening the sound was so loud that I nearly jumped in my surprise. Within a few yards of where I lay there was, what looked like, an explosion; a spray of gilded drops flew from the water, and I caught a glimpse of a large beaver disappearing in the midst of the splash. The cautious animal had been making his evening tour of the pond to see that all was safe; so slowly had he come that he resembled a drifting log, and I had not seen him, for he had been careful to stir no tell-tale ripples on that glassy water. How long he had remained near me I could not tell; perhaps only a few minutes, perhaps an hour, we were both patient and had made no move. Then a slight current of air must have carried the awful man scent across the water, and his sensitive nose had caught the warning. Instantly the alarm was given; head and tail were raised simultaneously, and then the heavy tail was brought down with terrific force, and in this way made



Beaver striking Water with Tail as Signal of Alarm. Both Head and Tail are shown raised.



Second Phase of Splash.

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the noise which had startled me so badly and at the same time broadcasted the information to all the other beaver that an enemy was at hand and that they must take cover.

It was all very interesting, but at the same time very annoying, for though I had enjoyed the evening to the utmost I would have liked to have seen the shy animals, young and old, going about their various occupations, free from all suspicion of being watched. It is always difficult to avoid being discovered near the edge of a pond, especially on an evening when there is no wind, because then the water seems to attract any light current of air that happens to be moving, and in this way safeguards the animals from surprise. There was nothing to be gained by further waiting, for it might be hours before any beaver would again venture forth; so I returned to my small camp a half-mile or so away in the woods and there prepared my lonely meal, for I was, according to my usual custom, by myself. Companions are all very well, but I prefer to be alone when studying animals. There is then more chance of seeing things that are interesting as there is less likelihood of disturbing noises being made.

Before going on to other features of beaver life it might be well to see what would happen to the colony whose early work I had watched so patiently. The number of inhabitants had increased so that,

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instead of the original two pairs, there were perhaps one dozen all told, perhaps even more, if all the young had reached maturity. This meant that more housing accommodation would be required for the coming winter.

In the natural course of events the first thing to do would be to enlarge the dam and put it into proper order, though I have noticed that repairs are usually carried out immediately there is the least sign of damage. Building material is abundant, as there are all the peeled sticks which had provided food during the past winter.

No serious work will be begun until summer is past; then the animals begin their activities. Simultaneously the height and width of the dam are increased, till it reaches a length of about sixty feet and perhaps another foot has been added to its height. This means that the pond has become larger and deeper and the old lodges flooded, so that new and larger ones must be built to house the increased size of the families. The young, well grown by this time, work with their parents, and in this way learn their 'trade'. By the smaller size of the tooth-marks on the cut trees it is easy to discover how much work the youngsters do. In fact, by these tooth-marks much can be learned. There is nearly always some variation in the cutting teeth of each individual so that, with care, it is possible to ascertain how many there are in a colony. The

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young, born in the spring, will remain with their parents until the following summer, when they will have to shift for themselves, find mates and build homes and start housekeeping on their own. It is believed that should a beaver in its wild state lose its mate, and they pair for life, the survivor will live afterwards alone. In this case it will usually become a burrow-living animal, and will not build a lodge for itself. This has not been proved definitely, but is generally accepted as a fact. As a rule, a lodge is only used for one season, but like most rules it admits of very many exceptions. I have known one, for example, that was inhabited for five consecutive years, but I do not believe this to be a common occurrence. Small lodges are usually badly damaged by weather and can seldom be used a second year.

Among the stories told of beaver there are many that have little foundation in fact. One of the most absurd is that the animals can fell a tree in any direction they wish, and that they will invariably drop the tree towards water. Of this there is a perfectly obvious explanation. Trees growing on a river bank or on the edge of a pond will, naturally, have a greater development of branches on the side where there is the greatest amount of light, that is to say, towards the open space of the water, and frequently they lean more or less in that direction; it does not require a super brain to see that when the tree is cut it will,

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owing to the greater weight of the outward-growing branches, fall towards the water, utterly regardless of the beavers' wishes; it simply must happen.

I have examined many hundreds of trees that have been cut and am forced to the conclusion that the animals cut them without the slightest idea of which direction they will fall. The beaver is an extraordinarily clever creature, and does things that are almost unbelievable; but there are limits to what it is able to accomplish, and I can see no sense in attributing to them qualities which they do not possess. A certain writer told a story of a beaver cutting a tree, and that while this was being done his companion remained in the water watching for the first indication of the top moving; as soon as this happened he signalled to his mate so that he could get clear of the falling trunk and so escape injury. The absurdity of this story is only too evident; first of all, how could the little animal in the lake distinguish one tree from another in the darkness? Their eyesight is not particularly keen, but even if it were it would be a remarkable feat. Then why should it be necessary to tell the beaver that was doing the cutting when the tree was about to fall? With its teeth against the wood the sound of the first creaking would be so loud that it would be quite sufficient warning, if warning were necessary. To prove this, hold a stick against your own teeth, break it and see what happens. Such ridiculous stories can



Example of a Beaver's Mistake in cutting a Tree. Twice it lodged against other Trees, and, as shown here, the animals made two vain attempts to bring the Birch down, and have started a third Cutting.

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do no possible good. Natural history to be useful and interesting must above all things bear the stamp of accuracy, otherwise it fails completely.

But to return to actual facts relating to the cutting of trees. I said that the animals do not know in what direction they will drop, and this is proved by the large number that become lodged in the branches of the neighbouring trees. When this occurs, they may either be abandoned without further effort, or, very persistent effort may be made to bring down the desired tree. In one case within less than two hundred yards of my camp on Sandy River, Newfoundland, a good-sized birch, over thirty inches in circumference at the base, was cut through, but the top became entangled in another tree so that the trunk dropped a foot or two from the original stump. Then the beaver cut it through again about eighteen inches from the ground, but without the hoped-for result. Not to be outdone, they made one more effort, and this proved successful and the tree fell, very much to my delight, as it seemed hard on the little fellows to have had all that work for nothing. I wanted to help them; but refrained from doing so, as I was anxious to see what the results would be if they were left to themselves.

In their methods of conducting wood-cutting operations they appear to have no set rules. I have found where a concentrated effort was made and an entire grove of poplars was brought down, none was left

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standing, except a dead one. This grove was fully a hundred yards from the nearest water, and there was dense undergrowth covering the intervening space. Before the tree-cutting commenced, a path, four or five feet in width, was cut and completely cleared of all obstructions. This proves conclusively that the animals had worked out the problem and knew exactly what they were going to do.

While on the subject of tree felling it may astonish the reader to learn of the immense size of those that are cut; the largest I have ever found freshly dropped was a birch which measured sixty inches in circumference. This was in Newfoundland; how long it took to cut through I cannot tell, because when I first saw it the work was nearly half-done, and from the tooth-marks it was evident that at least four different animals had been engaged on the task. I have found very much larger stumps, but they were old. The largest record I have been able to obtain was of a tree, probably cottonwood, one hundred and twenty-six inches in circumference, mentioned by Enos Mills.

Poplar is probably the beavers' favourite tree; birch, alder, willow, mountain ash and maple follow in more or less that order. Conifers do not appear to be popular; only occasionally have I found their bark eaten. It is said by old trappers that the female uses it before giving birth to her young. How much truth there



A Poplar Grove completely cut down by Beaver.



Poplar tree felled by Beaver, being cut up into convenient lengths for carrying.

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is in this I cannot say. Various roots, especially of aquatic plants, also furnish them with food.

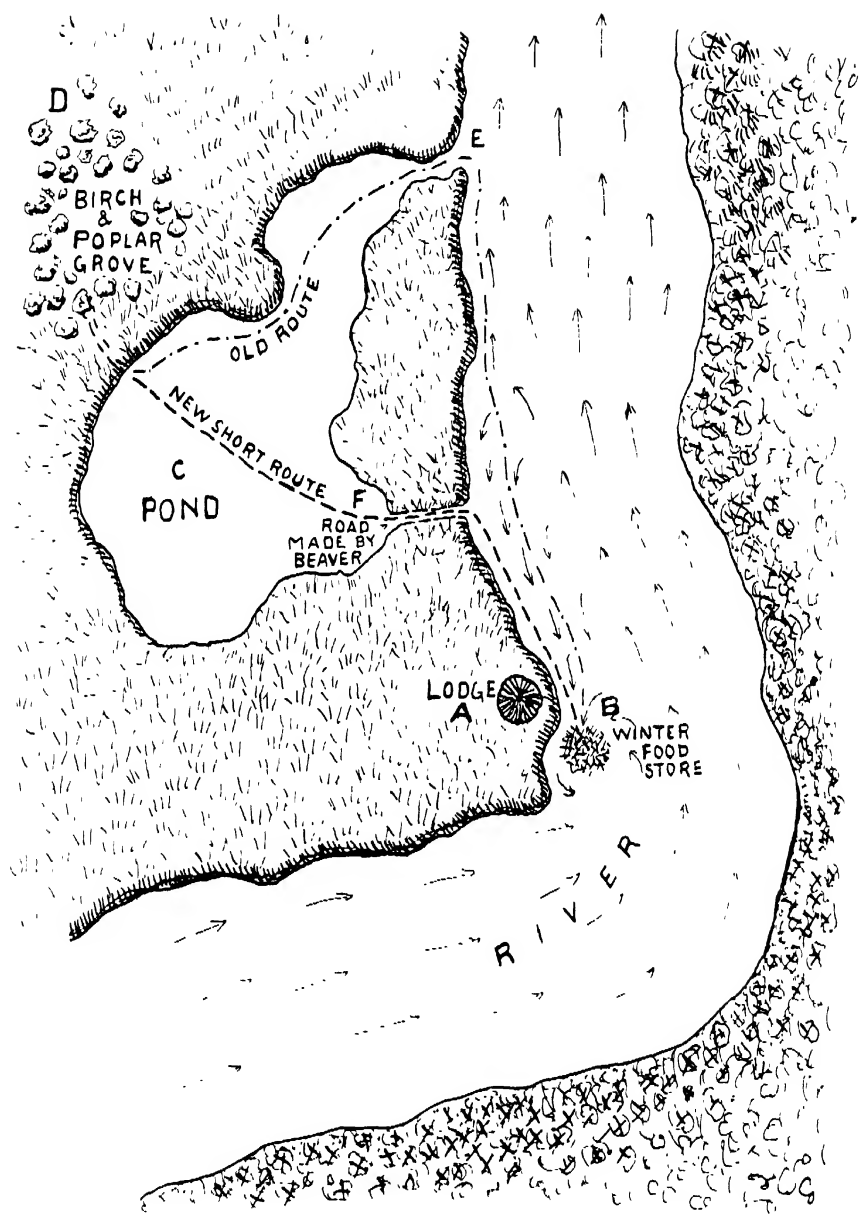
Having dealt with the felling of trees, the next point will be the problem of bringing the branches and trunks to the food store, and here we find that the beaver shows, what I consider, his greatest ability to reason things out in a logical manner. The results indicate reason, rather than instinct.

The strange fact is that the beaver is not considered to be high in the scale of animal intelligence. The brain, though of fair size, is almost free of convolutions; it is indeed nearly smooth, and this is generally believed to prove an inferior type. Yet, in spite of this, I doubt whether any animal shows a greater power of thought, for, not only is the actual work accomplished a proof of unusual skill, but all sorts of unexpected problems are worked out in an astonishing way, and as a rule successfully; and, as already stated, plans are made and work done in anticipation of conditions which do not at the time exist, but which *may* arise. If this demonstrates instinct, then it is difficult to say where the dividing line is between that and intelligence. If *we* do similar work we would say it was the result of our intelligence, but if the animal does it, why then, I suppose it is to be called instinct; and with that we satisfy ourselves and our conceit.

The best example I have ever seen of a clever means of overcoming a difficulty, occurred directly opposite

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a camp I once had on a large river. The accompanying diagram will help to make things clear. The beaver had a lodge (A) on a point where the river turned sharply. Their food store was in the back-water (B) where there was practically no current. A short distance from the river there was a pond (C) on the further side of which there was a grove of poplars and birches (D). At first the animals, having cut the trees, swam with the branches across the pond (C), a distance of perhaps a little over a hundred and fifty yards, and came through the small outlet stream (E) and so entered the river. Once there, they discovered that between that point and their home there was a swift current directly against them. Under these conditions the task of taking the branches to the food store was discouragingly difficult; several times they tried to stem the water, and though they eventually succeeded, it was only after a great effort. The question was, should they abandon the grove of fine young trees which could be so easily cut and would provide a good part of their winter's food? Whether they held a meeting on the subject and discussed ways and means I don't know; but I do know that they solved the problem in a most ingenious and effective way by cutting a canal and a short roadway (F) from the pond to the river, at a point where there was a back current leading to where the food store had been started. Filled with curiosity, I watched the



Example of how Beavers overcame a Difficulty.

D is a poplar grove from which they took cut branches through the pond *C* to the river, via the natural channel *F*. Finding difficulty in swimming against the current to their food supply at *B*, they cut a road across a narrow part of land *E*, and joined the river where the current flowed up stream towards their lodge at *A*.



Beaver Path cut from River to Pond.

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first beaver come through, with his load of branches, enter the river and without the slightest effort take them to their destination. Could any man have reasoned this out better? I must emphasize the point that this is not a flight of my imagination, nor is it *hearsay*, that most dangerous adjunct to natural history study, but is what I actually saw from my well-concealed camp, which was not two hundred yards away from the scene; and I consider this a good example of the animals' remarkable intelligence.

I mentioned the word 'canal', which may cause some surprise; but beaver do build, or 'dig', canals, for the purpose of securing water transport. In many lakes these ditches may be found, sometimes connecting one small pond with another, sometimes as a short cut through a long island, and frequently they lead from the main pond to a grove of desirable trees; and in rare cases even go up slight hills, in short lengths, each ending in a natural dam instead of a lock, such as we use in our canals. At times, if there is not enough water to keep these ditches full, streams will be tapped and run in through narrow furrows to keep up the supply. These canals are not always small and insignificant, but are occasionally really serious pieces of work, reaching a length of many hundred feet. I have the report of one having been found which was over a thousand feet in length. Considering the size of the animal the magnitude of such work is something

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at which we may well wonder. The fact that the beaver is so utterly defenceless, that he does not even attempt to resist the attack of an enemy, accounts for their desire to avoid being on land more than a short distance from water; hence the making of the waterways or canals leading to the source of the wood supply, which would otherwise necessitate the animals' being on land, and consequently, at the mercy of any enemy, while dragging or carrying the branches to the bank.

The most important work done by beaver is, without doubt, the building of dams; it is the most conspicuous and produces the greatest results. In size they vary, from tiny little ones, but a foot or two in length, made to stop some small overflow, to huge serious structures up to a thousand feet long. Some are low, owing to the flat nature of the land; others may reach a height of nearly twenty feet; these, however, are rare; in fact anything more than twelve or fifteen feet is uncommon and these are seldom of great length.

In all cases the beginning is small; the gradual increase being due to the demand for larger ponds, or lakes, as they may well be called, in order to bring the water up to the forest from which the trees are to be cut for food. Some of these large dams are the work of many generations of beaver and may be in use for more than a quarter of a century. The food supply usually governs the period of occupation,



Beaver Dam composed of large Logs.



Fine Example of Dam built by Beaver in Wooded Country. It was 365 ft. long and over 70 ft. of it was 7 ft. high.

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in the natural order of things; but, of course, there is also the trapper to be considered. He may destroy a thriving colony which would otherwise continue for a number of years.

The material used in the building of dams depends on the nature of the country, but, generally speaking, roots, sod, branches and logs furnish all that is necessary. In some instances stones are employed and these vary in size from small ones no larger than apples up to those which will weigh twenty pounds or more, and in rare instances up to over one hundred pounds. I once found a curious dam, in Canada, composed chiefly of stones worked in with sod, but almost entirely lacking in wood of any description; this, however, was scarcely thirty feet long and only about two feet in height.

I have heard it stated that all dams curve up stream, but this is not borne out by those I have observed. In fact, so far as I can see, among the hundreds that I have examined, there is no rule governing the curve. It may be up or down stream, straight or even double curved, like an elongated letter S. If anything, the tendency is towards a slight down-stream curve, both for the main structure and for the subsidiaries.

The ingenuity in selecting sites for the building of dams is quite extraordinary. Every advantage is taken of the nature of the ground and rarely are mistakes made. One of the most interesting examples

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that I have found was in Newfoundland. There was a small stream, perhaps thirty feet wide, with a very swift current. Some Englishmen, who had a bungalow less than a mile away, had considered seriously making use of this stream and with this object in view had made a careful examination as to where it would be best to erect a dam. Eventually they selected as the only easy place a point where there was a large boulder in the middle of the stream and another on either side. These three would act as anchors, so solid that, no matter how great the pressure of water might be, there would be no danger of the dam being carried away. They decided to do the work the following year as it was then too late to undertake it. About this time I happened to be in the vicinity and paid a visit to the stream, two or three weeks after the men had been there, and to my surprise I found that some beaver were busy building *their* dam on the exact place selected by my friends. This was a case of great *and* little minds thinking alike, and I may add that the work was thoroughly successful.

Sometimes, where a stream is very swift, the animals have difficulty in making a start, as the water carries away the sticks. Under such conditions the position of a fallen tree may determine the site, and in one case it appeared that the beaver had felled a tree across the stream and against this the dam was built.



Large Boulder used by Beaver as Anchor for a Dam.



bsidiary Dam built below main Structure.

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Another very interesting example of intelligence that I found, and one which sounds rather like a fairy-tale, was where the animals, in starting a new colony, had built a dam some thirty feet long and about three feet and a half high; very little heavy timber had been used in the construction, it was chiefly of sod, roots and alder branches. Scarcely had the work been completed than there was a week of heavy rain which caused more or less of a flood and increased the pressure on the dam to an alarming degree. The little engineers were evidently worried, as the structure had not settled properly and had, therefore, not reached its full strength. It was then late in the season and the loss of the dam would have been serious. There was only one thing possible to do, that was to make an opening of sufficient size to allow the water to escape; and this was done without delay. I have told this to people and they have laughed and said it was unbelievable. What must have happened, they declared, was that the dam had broken under the pressure of the water. But, unfortunately for this theory, I had examined the opening very carefully and found that the sticks had all been cut by the beaver, a clear proof that the breach had been made deliberately. As soon as the flood subsided, the opening was closed and the entire work strengthened. Fortunately I photographed the dam in each state and have these to confirm the story. It is the only example of this

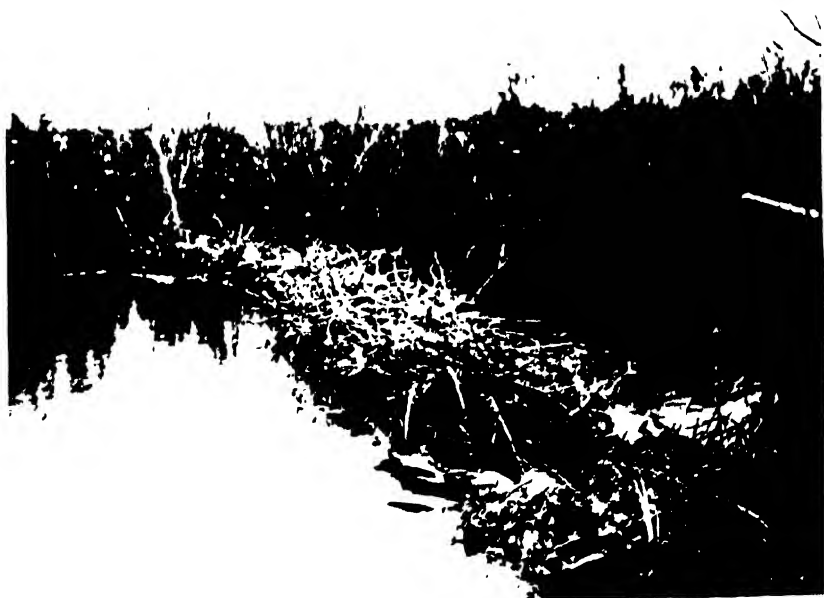
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sort that I have ever seen and, frankly, I was as much surprised as anyone could be. In fact, if anyone had told me of such a thing happening, I should perhaps have been incredulous. Strangely enough, my notes on this experience, which I had prided myself were absolutely original, were really not new, for I found in reading that delightful and interesting work *The Jesuit Relations in Canada* (the word 'relation' in this case meaning the story or account told), I found an almost exactly similar account of the cleverness of the beaver; so I had been forestalled by some hundreds of years. The wording of the old Jesuit priest, Father Jouvençy, in about 1610, when translated from the Latin, was almost identical with my own account written at the time of my discovery, or rather what I then believed to be a discovery, of a phase of beaver work. In a way I was disappointed, and yet there was a certain satisfaction in finding that the almost incredible act of intelligence that I had witnessed was not, after all, an exception.

Having given what, I hope, is a reasonably clear account of the various work accomplished by the beaver and of the probable reasons for all they do, I must now try to explain what, earlier in this chapter, I promised, and that is the *results* of the work done by these somewhat insignificant-looking animals, and show in what way man has derived direct benefit from their past labour.



A new Dam threatened with Destruction by a Flood.



The same Dam opened in order to let the Water

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In order to make things plain, let us follow in a sketchy way the making of a pond from its very beginning. A stream winds its way from the hills through a valley; this stream may be small or large; the valley also may be of any size, it makes no difference. A pair of beaver, or perhaps several pairs, decide to start a colony and by building a dam cause the valley to be flooded. At first there will be only a small pond, but as the years roll by and the number of beaver increases, the dam is made larger, until the small pond becomes a lake, untidy at first and not very clearly defined. The rising water kills the trees, which for a time remain standing; gradually they fall and their grey trunks and branches are strewn about like fantastic skeletons. Slowly they decay until they entirely disappear, and the lake is an expanse of clear water, free from obstructions, except occasional islands, on which lodges are built. As time goes on the supply of trees suitable for food becomes less and less, until, at last, the animals decide to seek fresh pastures and the place is abandoned. The dam, or dams, no longer kept in repair, soon become overgrown with bushes, whose roots work their way through and allow the water to escape. Slowly the lake decreases in size; it may take but a year, or it may take many, before it disappears entirely, and only the original stream remains; perhaps it follows its old course, but more likely it makes a new and straighter one and it runs through

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what, at first, will be a level swamp. It is level, because during all the years that the pond existed the rains and melting snows have washed down the leaves and mould from the surrounding forests. Water has a tendency to level the ground beneath it, therefore the swamp is more or less even. With the action of the frosts and sun the area dries, for it has the natural drainage of the stream. So that, what was once a forested valley, then in turn a pond, a lake, and a swamp, eventually becomes a meadow of the richest possible soil, made by the rotting vegetable matter that has been washed on to it. It does not require much imagination to discover that such land is of the greatest value to man for farming and gardening purposes. How many thousands of acres there are of such land, which owe their existence entirely to the industry of the beaver, no man can say. Throughout Canada and the United States it is easy to trace such land, whose total area must be immense when we consider that, throughout the greater part of the continent, the beaver formerly lived in large numbers; and wherever they lived they worked and wherever they worked man has reaped the benefit. Can the same be said of any other animal?

While this is not a scientific treatise on the beaver I feel that a few words on the animal as a species may not be out of place. Next to the Capibara of South America the beaver is the largest of the living rodents,

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though in former days there was a very much larger one found in Europe, to which has been given the name of *Trogontherium*, and one in America called *Castoroides*, whose skull was only slightly smaller than that of a lion, but neither of these is supposed to have been the ancestor of the present beaver, which has existed since the Pleistocene Age. Both in the New and the Old World they were found and had an immense range, including most of Europe, with the probable exception of Ireland; also in Asia as far south as the Euphrates, and in America from the Arctic Region to Mexico. To-day they exist chiefly in the more Northern part of North America. They are found also in Europe, where, thanks to careful protection, there are an increasing number to be found in Norway and possibly a few in Poland.

The last record of beaver in the British Isles was about eight hundred years ago and prior to that they were valued highly, the price of a skin having been fixed by King Howel Dda (who died in 948) at 120 pence, foxes and wolves being then worth about eight-pence. That they were common in England is proved by the number of places named after the animals, such as Beaverage, Beversbrook and Beaverbourne and others.

In Europe the animals were found in varying abundance until comparatively recent times; in 1829

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near Magdeburg there is said to have been a large colony. In Holland the last record was in 1825 and in Livonia they became a nuisance in 1724 and were finally destroyed in 1841.

Curiously enough the earliest records of beaver deal with the animal not as a fur bearer but as the producer of that strange substance known as Castoreum, which is contained in glands situated below the pubis. Both Pliny and Hippocrates mention the medicinal properties of Castoreum, to which the ancients attributed extraordinary virtues. There was scarcely an illness that did not yield to its curative powers, at least so it was believed. Among the list we find deafness, gout, epilepsy, fever, pleurisy, 'lethargy', rheumatism and toothache; it also did the marvellous feat of inducing sleep and preventing sleepiness. No modern quack medicine ever dared to offer a greater array of maladies to be cured by a single substance. We may laugh at those who lived two or three thousand years ago, but, strangely enough, there are many people living to-day who have the most implicit faith in Castoreum as a cure for a variety of ailments, particularly tuberculosis and rheumatism; and the demand, I believe, always exceeds the supply, with the consequence that the price of ten dollars or more per pound is paid without question. It requires from four to six beaver to yield a pound of the strangely scented substance. The European beaver (*Castor fiber*) closely resembles

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the American species (*C. Canadensis*); so nearly are they alike that only a scientist can distinguish the difference, which is chiefly in the proportions of the skull, the American one being slightly the broader.

Chapter II

In the Canadian Rocky Mountains

DEALING WITH GRIZZLY BEAR, BIGHORN SHEEP, ELK,
MOOSE, MULE DEER, MARMOTS AND THE LITTLE
CHIEF HARE

WHEN visiting the Zoo have you ever stood by the den of the grizzly bears and wondered what it would be like to see one of those huge animals in its wild state *and* be unarmed? I have, and the very thought of it gave me a creepy feeling down my spine. I asked myself what I would do and myself refused to answer, largely because—well, because there seemed to be no way of working out a reply that was in any way satisfactory. Would I run? No, for that would be a simple waste of energy. Would I faint? Very probably. Anyhow, I would as likely as not wish myself dead and the chances would be entirely in favour of having my wish gratified.

Looking at the bulk of the animal and realizing the terrific strength concealed in that wonderful fur coat conjured up all sorts of awful visions. The bars that imprisoned the monster told their own story and told it with a painful vividness; for had they been

IN THE CANADIAN ROCKY MOUNTAINS

less strong they would have been useless; and then I watched the great creature take an insignificant tin of sweet syrup, rip it open and lap up the delectable stuff and somehow it seemed so utterly incongruous. It was like watching an elephant pick up a silly little peanut and send it into its mouth to disappear in the great body. I have seen hundreds of elephant in their wild state in Africa and on more than one occasion felt doubtful whether I should ever gaze on another sunrise, and curiously enough nothing serious happened, but that is probably because I have never expected to be killed. But somehow the grizzly was different and, as I said, I wondered.

From the bear dens I went to look at the elk, that most magnificent of all the deer. In their bare uninteresting enclosure they stood out as a wonderful contrast between the work of man and the work of nature. If they were beautiful there, how much more so would they be in their own natural environment? I tried to picture them in the rich flower-carpeted valleys, or among the glorious autumn-tinted trees, with the background of mighty snowcapped mountains, at home among the unsurpassed country to which they belong. Then I searched in vain for a Rocky Mountain sheep, and I was disappointed. Neither could I find a goat from that same country. Why should I have been so particularly interested in these animals when there were so many others to look at? Well, the truth

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is that by a stroke of quite unexpected good fortune Fate had decided that, with my daughter, I should soon be headed westward to the world-famous Canadian Rockies. Fate's other name was commonly known by the three letters 'C.P.R.', which, as everyone knows, or should know, stand for the 'Canadian Pacific Railway'. Yes, it was thanks to this organization that our—for we both had the same wish—great wish was to be realized, for which we were and still are duly thankful, and this accounts for the special interest displayed in the Zoo. We wanted to see, at close quarters, the principal animals that we hoped and, I may add, expected to see in the course of the next few months.

It was towards the end of June, after the six-thousand-mile journey by sea and land, that we reached the beginning of the Rockies, a relief from the long stretch of prairie land, beautiful perhaps in its own peculiar way, with its vastness of productive soil, its small ponds and swamps alive with ducks of many kinds, its fine cloud effects; it had, of course, its own beauty, but that was all forgotten when we came to the great mountains which rose so abruptly after we left Calgary and the train wound its way between the mighty piles of rock and timber, following the course of the Bow River. The mountain-tops were still covered with the snow of the past winter and in the early morning sunshine it seemed dazzlingly white.

From one side of the railway carriage we would

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dart to the other, as the train, twisting and turning, opened up new and ever more wonderful views. Now and then a mule deer, standing among the freshly leaved poplars, gazed at the passing train, showing no fear of the puffing monster, but only a mild curiosity. Then far up on the steep rocky slope of mountain we saw our first Rocky Mountain sheep, seven or eight ewes and a couple of tiny newborn lambs, and, like the deer, they felt no fear and stopped feeding only long enough to glance in our direction for a few seconds. The fresh spring grass was more interesting to them. Further on towards Banff we caught sight of a small herd of elk and I felt that all I had been told about the country was nothing to the reality. So often we are led to expect far more than actually exists, but in this case no one had done justice to the beauty that was spread out so lavishly for us to enjoy. We both longed to get off into the solitude of those great wilds and live, yes, really live in this wonderland, away from trains and motors and roads, where things were just as Nature had arranged them; where, with camera and paints, I could find endless subjects and, if luck was with me, be able to bring back a rich store of interesting material. Banff with all of its beauty, and surely no town has such a setting, was but a means to an end, a place from which we could start for the wilds, and while arrangements were being made for a guide and horses and the necessary equipment of food,

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we had time to enjoy the country; the high mountains which surrounded the town as though guarding it from the world beyond; the two rivers, the Bow and the Spray, which met below the magnificent Banff Springs Hotel; the endless forests which rose from the valley and marched up the steep sides of the mountain as though trying to conquer their rugged peaks. It was all like a dream, even the smart scarlet-coated mounted police, the occasional Indian and the 'chapped' cowpunchers did not seem real.

As a rule, when we anticipate too much we are more than likely to be disappointed, but here everything was better than we had expected, and when early one morning we rode out of the town with our guide, Tex Wood, and the string of pack-horses, we felt that life was a wonderful thing.

The immediate purpose of this first trip was to find sheep, the famous Rocky Mountain or Bighorn sheep; animals that I had for many years hoped to have an opportunity to photograph, and according to all that I had been told the region round Sawback Lake would furnish me with what I wanted. I had 'movie' cameras and ordinary ones, sketch books and a full painting outfit, but, of course, no rifle or shot gun, as we would be within the Park Area in which, I am glad to say, no shooting is allowed.

After leaving Banff we took the trail northward between Mount Norquay and Stoney Squaw, a fairly



A captive Rocky Mountain Goat in the Banff Zoological Park.

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steep rise followed by a drop into the Valley of Forty-mile Creek. The whole country was at its best and every glade and valley was a blaze of many-coloured flowers, among which the most conspicuous was the Indian paint brush, which ranged from white, lemon, orange and scarlet to deep crimson. Here and there were patches of forget-me-nots more beautiful than any I have ever seen and larger; everywhere there were flowers, but nowhere did we see any sign of animals during our first day's ride, not even a deer. On the second day, while going over the pass, we found evidence of grizzly bear having been about. Gopher holes were dug up as though pigs had been rooting, but beyond an occasional gopher not an animal was to be seen and frankly I felt disappointed; still there was the beauty of the scenery to be enjoyed, though it scarcely compensated for the lack of living creatures.

It was afternoon when, after a fairly hard ride, we reached Sawback Lake and made camp a few yards from the water's edge, a really perfect place, with good pasture for the horses in the Alpine flower-strewn valley. Mountains rising to ten thousand feet in height surrounded us; a glacial stream, milky in the warm afternoon sun, came from the melted snow, passed our camp and flowed into the jade-green lake. Tents were pitched and the photographic outfit made ready, while my daughter, always keen on fishing, went out to try her luck. In half an hour she caught her allow-

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ance of fifteen fine cut-throat trout, so the larder was supplied, and as we sat down to our dinner our first visitors came, two blacktail or mule deer, a doe and a fawn. Not the slightest sign of fear did they display, and it was delightful to watch them browsing on the new leaves around the camp and even coming within three or four yards of us searching for salt, which had been scattered about for them.

With the coming of morning I went off with Tex to see if we could find any sign of sheep and make some sort of plan for work. We followed more or less the course of the small stream upwards towards its source in the snow, which still remained in the sheltered gorges and upon the higher slopes. Walking was not easy owing to the combination of the altitude and the roughness of the rocks and steep gradients; here and there we went through grassy meadows, which were like wild-flower gardens. Inquisitive gophers stared at us as they sat upon their hind legs, always close to their burrows. They were not accustomed to man and were filled with curiosity. So long as we kept moving all was well, but the moment we stopped they would give a short whistle and scuttle into their holes and reappear a few minutes later to make sure that we had moved off. In making our way through a spur of forest a mule deer came to have a look at us. Its lack of fear was very delightful to watch, for it showed how well protection was working out; but a



A fine young Mule Deer Stag surprised by the Camera.

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few years ago the sight of man would have frightened so timid an animal as a deer. Shooting was then allowed and man was an enemy to be avoided at all cost. Any display of curiosity would have spelt death, and now what a change had come! How quickly these animals of the wilds had learned that laws had been made for their protection, and man, who for countless centuries, from the days of the Indians with their bows and arrows, to the white hunter of more recent times, with his deadly rifle, had always been an enemy was now a friend. It was gratifying to see this change of attitude and I wondered whether I should find that the sheep and other animals would prove equally confiding. If such proved to be the case my task would be easy and I would secure all the material I required in a very short time, provided, of course, I could find the sheep. So far we had seen no sign of them.

On coming to the end of the trail through a dark patch of forest we moved cautiously, for beyond us the country was open meadow and masses of rocks which had been brought down from the steep slopes of the mountain by the snows of many years. Among these rough grey boulders sheep might well be hidden, and so it was advisable to make a very careful examination before leaving the shelter of the trees, but search as we might we could find no living creature within sight. Beyond us the mountains rose with such abruptness that I felt discouraged, for I realized that to climb

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them with the heavy photographic outfit would be impossible. I had never recovered from the effects of the gas poisoning received during the war and my heart would be sure to rebel if I attempted to make the ascent of those mighty piles of rock. Sheep photography was, apparently, going to be out of my reach after all, and I sensed a feeling of disappointment at the prospect of possible or even probable failure. Perhaps it was the effect of the altitude which depressed me, for we were up about seven thousand feet and the walk from camp had been trying to one with a weak heart.

Tex told me that under ordinary conditions he would have expected to see herds of sheep in the meadow before us and he could not understand what had become of them. Suddenly, as we made our way slowly across the moist grassy stretch, the stillness of the morning was broken by the sound of what I thought was someone giving a sharp whistle. I was startled and surprised, for I was sure there was a human being in the neighbourhood, a most unwelcome human being, too. Tex laughed when he saw my look of surprise and informed me, very much to my relief, that the strange sound had been made by a marmot, and true enough instead of a man I saw a bushy-tailed marmot sitting on a rock. He had given out the warning call to all creatures within hearing that the peaceful country was being invaded by people, two dreadful-looking creatures carrying curious weapons on their backs. These little



Feeding, unconscious of the "hunter" —



She hears the click of the shutter



—and discovers that she has been "shot."

Mule Deer Doe stalked with a Camera.

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animals, about the size of small badgers, coloured a creamy grey and dark chestnut, with bushy tails and short legs, are somewhat like the ordinary woodchucks. They are to be found throughout the Rockies in grassy and rocky places. Their chief peculiarity is that they hibernate probably longer than any animal in similar latitudes, appearing only when the snow has melted and retiring to their underground homes early in the autumn. They are supposed to be true vegetarians, but I discovered before long that they have very catholic tastes and will eat things even though they may not usually be considered fit for food. The strange habit of playing sentry has lost them the affection of men who still hunt the wild game of the Rockies. They are for ever alert and seem to have remarkably good eyesight. The instant they see an intruder they give forth a shrill and rather long whistle, which carries far, and immediately every animal within the range is informed that there is possible danger about and each, according to its nature, takes what steps are deemed necessary for safety. The call is even carried on by other marmots to make certain that the warning shall be heard. Just as the hartebeest in East Africa and other animals and birds in other countries appoint themselves protectors, so does the marmot in the Rockies. He is an interesting little beast and I made up my mind to devote some attention to him whenever a favourable opportunity offered.

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While we were passing the pile of rocks in which the whistling marmot had disappeared there was another curious two-note whistle, shrill and fairly loud, and, looking in the direction from which it seemed to come, I saw what looked like a spot of grey flash from rock to rock and suddenly vanish. A moment later it appeared again and I realized that it was the Little Chief Hare, also called Rock Rabbit or Pika (*Ochotona Princeps*); the smallest, I believe, of his family, beautiful in his soft chinchilla-coloured coat and interesting in habits. For years I had heard of these delightful shy creatures and it gave me quite a thrill to see them in their own native home, but their remarkable activity caused me to wonder whether it would be possible to photograph them; their speed, combined with their diminutive size, made the prospects none too bright. I particularly wanted to get pictures of their hay-making efforts if it were possible. During the summer months these tiny creatures, possessed as they are of a provident nature, literally follow the old adage of making hay while the sun shines. That is to say, they keep up a ceaseless gathering of grass and plants and carry all to their chosen spots. If the weather is damp the grass is put out of sight among the protection of the rocks, but when the sun shines it is pulled out to dry and kept out so long as the conditions are favourable. To guard against possible loss from any cause they do not place all their eggs in one



Rock Rabbit, Pika, or Little Chief Hare.



The Rock Rabbit's Harvest, drying under a Boulder.

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basket, but make a large number of stores, all of which can be reached by underground passages when the snow lies deep on the land. After the hay is completely dry it is put away for use during the long months when the land is hidden from sight. Evidently the hibernating of the rock rabbit is not a period of unbroken sleep, the large supply of stored food shows that there must be a considerable amount of unseen (by man) activity on the part of the small creatures. Unfortunately, though I spent many days trying to secure a photograph of one of these little hares actually arranging his hay, he was always too quick for me. Everything they do is done at a perfectly absurd speed, which is such that by the time I could find the animal, so small and so very inconspicuous, on the ground glass of the reflex camera, he was gone before the shutter could be released. Lots of times I got good pictures of the rocks and the hay, but the harvester was always missing.

To continue our search for sheep: we were making our way along a narrow grassy valley which was bordered on the one side by the rugged boulder-strewn mountain rising so abruptly that it formed an effectual barrier, at least so far as I was concerned, to the upper plateaux. Sheep might use it and evidently did, for here and there on grassy patches narrow trails could be seen leading among the grey rocks. On the other side of the little valley was a forest-covered ridge running down to a broad flower-covered meadow, above which

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towered the massive Sawback range of mountains, blue in the morning light and patched freely with fields of snow. Through the meadow were two streams coming from the melting snow. To say that the scenery was beautiful would be totally inadequate, it was glorious and in every way perfect as a setting for the hoped-for pictures of the Rocky Mountain sheep. But so far I had seen none. However, Tex, who had visited this country before, assured me that we were certain to find the animals as this was their favourite feeding ground. He was, in fact, so certain that I decided to establish a blind or hiding-place which would command the narrow part of the valley and give the mountains as a suitable background.

The climb had strained my heart, so I agreed that it would be a good plan if Tex would pay a visit to the country higher up and see whether the sheep were there, while I spent the time arranging my hiding-place. Owing to the uncertainty as to whether any sheep that might visit the valley would come from above or below it was difficult to decide where to put the blind so that the wind would not reveal my whereabouts. At last I found a suitable place which had the advantage not only of giving a good view both up and down the valley, in case the sheep came, but also of being opposite a place where a family of marmots lived, so that I could watch them when nothing else was happening.



The Home of the Canadian Rocky Mountain Sheep.

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Tex returned an hour or two later and reported having seen a small herd of sheep over the crest of the nearest ridge, less than a thousand feet above. After careful deliberation I decided not to attempt this climb to-day as it was getting late, so instead we made a couple more blinds in the broad meadow below, to be used in the event of the animals feeding down there. While engaged on this work I saw my first sheep, or rather I saw their heads, for they were peering over a rocky ridge far above us. There was one fair-sized ram and the rest were ewes. But it made no difference what they were or how anxious I might be to photograph them, they did not intend to give me a closer view, a few minutes' scouting was sufficient for them. We were men and men were creatures they did not like, so off they went ever higher and higher. 'Excelsior' was their banner, and they were soon lost among the grey peaks. This was not a particularly encouraging beginning. If all the sheep were as wild as this lot I would have my work cut out for me. Tex, always an optimist, assured me that we had struck a bad sample; that we would find some that were tamer, he felt certain.

After leaving part of the photographic outfit *cached* and ready for use the following day, we returned to camp. The next morning bright and early we returned to the hunt, and I spent a hard and very unprofitable day trying to stalk the wary and very elusive sheep,

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but they were too much for me, take what care I might, when I peered over the boulder or ridge at the end of a patient crawl, there was never a one within range of the camera. Far away I would see them standing on some high point watching me and apparently laughing at my efforts to outwit them. All I could do was to lie down and try to recover my breath and rest my much-overtaxed heart. Evidently my only chance was to stick to the blinds and let the sheep come to me instead of going after them. It would be easier and probably in the end more satisfactory, though, without doubt, it would require more time and patience.

For several days I sat in the different blinds, and though sheep were frequently within sight they were always above me and far away. Fortunately I had my painting material and was able to do a certain amount of work, though it was difficult to keep one's attention on the painting and at the same time watch in all directions for the possible approach of some silent-footed animal. When not sketching I found endless interest in watching the marmots, who were entirely unconscious of my presence, for I was well hidden behind a screen of foliage, from which only the camouflaged cameras protruded. If the sun was shining the animals would sprawl about on the rocks taking sunbaths or they would enjoy a feed of grass. Now and then something would startle them, perhaps

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it was a rock or small stone dislodged by some cause that fell with a strangely loud sound, for the country was very still and the least noise seemed loud; perhaps a current of air carried the human scent to their sensitive noses. Then they would scramble on to a look-out rock, sit up and give the warning whistle, and every marmot in the vicinity would get near to cover or disappear into his burrow. But most interesting of all was to watch their wrestling bouts. A pair of them would stand up, usually on a flat rock, and would wrestle almost like human beings and appear highly delighted when they made a throw. Sometimes instead of wrestling they would play a regular game of 'tag' among the boulders, in which several would take part. On day I was so interested in watching their antics that I failed to see a small herd of sheep. They had come through the trees instead of down the open valley, and before I realized it they were standing, looking very much surprised, not twenty feet away, and almost behind me. I was utterly powerless to act or take advantage of the opportunity, the first move on my part and of course they all scampered off. For some reason I had never thought of sheep coming through the forest, that did not seem to be their proper place, but I found out later that they spent a good deal of time among the trees. So I learnt my lesson and afterwards kept a better look-out. There was at least one satisfaction to be had in this unexpected visit,

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and that was the knowledge that sheep *did* come to the neighbourhood of my blind.

One day I heard the sound of a stone falling some distance away. For a while I could distinguish nothing, but at last among the rough pile of rocks I caught sight of a grey form standing motionless as though it had alarmed itself by dislodging the tell-tale stone, and was anxious to learn whether any enemy had heard the sound. Needless to say I remained absolutely motionless and expectant, as I felt sure the animal would eventually come along the valley and, therefore, close to my hiding-place, which would mean that at last I might secure a photograph of a wild sheep in its native home. For fully a quarter of an hour that animal remained still, and then, satisfied apparently that all was well, moved slowly down the steep rocky slope into the valley and headed towards where I stood patiently waiting. When it was perhaps thirty or forty yards away I began turning the handle of the 'movie' camera. In a way of course it was exciting, for it was my first 'shot' at the Rocky Mountain sheep. Suddenly as I was working the camera I heard a rustling sound on the ground, and glancing down was decidedly surprised to see an impudent marmot dragging my mackintosh along the ground *between* my feet. That was about the last thing I should have expected as these animals are extremely shy. I was in a rather strange predicament. The sheep must be filmed and



A suspicious Marmot in the Canadian Rockies.



Rocky Mountain Chipmonk having Breakfast.

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the mackintosh must be saved. If I made any noise or move the garment might stop, but the sheep would go. The only thing to do was to compromise, and I spent a minute or two making exposures, and then made a grab for my mackintosh. The marmot seemed quite surprised and moved away in a hurry, but he had in the meantime bitten several large holes in my pet waterproof.

Later in the day while I was eating my simple lunch the little thief paid me another visit. He seemed filled with curiosity, and was evidently interested in the smell of the strange food. Several times he came to within a few feet of where I sat in the hiding-place, but at the slightest move on my part he would rush away. At last, however, he condescended to feed from my hand, and there was something very delightful in the way I was accepted as a harmless creature while we shared the meal. From all that I have heard since about the marmot I have come to the conclusion that this was a most unusual experience. In fact I have never met anyone else who has lunched with one of these strange little animals.

Frequently in the course of my wandering life have I had the confidence or even friendship of wild creatures, both birds and animals, even weasels, nervous and shy though they are by nature, have 'sat' at my table, and it is extraordinary what a thrill one gets from such an occurrence, perhaps it is because one's vanity

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is flattered or because it is so unusual. Be that as it may, it is one of the things which adds so greatly to the pleasure of being out in the wilds all alone. It is then and only then, I think, that it is likely to happen.

During the two days that followed luck did not smile on me. A few sheep were seen in the distance, and it was interesting but aggravating to watch them. Marmots and rock rabbits amused me with their antics, and I secured some interesting film of the former.

Before returning to camp on the third day I decided to build a blind further down the valley, as it appeared to be a favourite feeding-place for the sheep. Very early the following morning I left camp alone and made my way towards the new blind. Approaching it with great care I saw a number of sheep feeding in the grassy valley not more than a hundred yards from where the cameras had been placed all ready for just such a contingency. I was confronted, however, with the problem of reaching the 'blind' without being discovered, and for nearly an hour I was forced to crawl along the ground seeking whatever shelter there was available, and there was little enough. Time was valuable because the heavy clouds, which were settling on the snow-capped mountains that rose high above the valley, threatened rain before very long. At last, after almost superhuman efforts, I crept into the blind unseen and unheard by the feeding sheep and fortunately the wind was in my favour. Otherwise it would, of course,



Rocky Mountain Sheep suspicious.

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have been hopeless. Luck, however, was with me, the rain held off for over an hour, and I succeeded in exposing about six hundred feet of film, in some of which the animals were not more than twenty-five yards away. Then the storm broke with all the violence that is to be expected in a mountain country during the summer. Not only did it rain, but hail and snow fell at times, and the air was so cold that I had a thoroughly miserable time, but even that could be endured for I had my pictures, both still and cinema.

After the storm had passed Tex Wood and my daughter joined me, and together we laid a trail of salt from the higher feeding-grounds to my former blind, as I was anxious to see if the sheep could be coaxed to come where I wished. A good background is of great value in animal pictures, and there I had everything from snowfields and mountains to trees, rocks and flower-strewn Alpine meadow.

The following morning, shortly before the sun rose, was destined to be a memorable one, for I was to have a new experience and I may say it was a thrilling one. Life to me has been an almost constant search for something new, and if the something happens to be of a thrilling nature, why so much the better.

In all my dealings with the creatures of the wild I have developed certain theories, one of which is that it is possible to say 'boo' to any sort of wild animal

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with the desired effect of making him or her turn tail, if he or she has one, and bolt. It has been a sort of creed of mine that the wild beast, no matter how wild it be, does not, as a rule, want to come into close contact with man, and it simply makes good and proper use of any reasonable excuse to separate itself from its so-called superior cousin. Man spells danger, and well do the wild creatures know it; experience gained through countless centuries and generations have resulted in an instinctive fear of the clumsy yet ingenious biped who kills without actual contact and only too frequently without reason.

Now, in my wanderings in the wilder parts of this interesting world of ours I have come into fairly close contact with many kinds of large and small and medium-sized wild beasts, some ferocious, some peaceful, some cunning and some foolish. But regardless of size and temperament they have all, or almost all, turned their backs on me when I said 'boo'. I have said 'boo', metaphorically speaking, of course, to elephants, and though at times an individual, usually a cow with her calf, may have disregarded my hint and even made a dash in my direction, yet in the end, if I said 'boo' with sufficient firmness and clearness of enunciation, I have always enjoyed the pleasure of seeing the elephant's back view, clumsy, unbeautiful and bewilderingly large, yet so very satisfactory. I have said 'boo' to lions, yes and even to lionesses, they too have vanished



A Group of Ewes and Lambs in the Rockies.

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—as a rule—and by so doing they proved to me that their sense of sound is not good, otherwise the tremulous tones of my voice would have revealed the fact that my knees must have been shaking, which is generally conceded to show that I was no stranger to fear. I have said 'boo' to rhinoceros, those quaint comic supplements of the African wilds, whose bad temper is stronger and more developed than their brain, and they, too, have usually trotted off. I have spoken in a similar way to various antelope, deer, caribou, moose and others and always with the same result, but a new experience was in store for me; I was to find the exception which would prove the rule, or very nearly prove it, for I tried to say 'boo' to a trio of grizzly bears, and that is not another story but is what I now propose to tell.

It happened in this way: on this particular morning, July 19th, 1928, to be exact, when we, that is myself, my daughter, the guide and his daughter, were in our very beautiful camp, which as already stated was but a couple of days' ride north of Banff. The pale green lake which stretched out between the mountains was but a few yards from our tents. On one side was dense forest, on the other a flower-carpeted narrow and rough valley through which ran a stream of melted snow, cold and clear as crystal; behind us a great barrier of rock-clad mountains where the Big-horn sheep roamed in large numbers and furry marmots

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played the part of sentries and whistled loudly when a supposed enemy appeared. It was, as I have tried to indicate, a very wonderful country, full of beauty and interest, and we were the only human beings about. We had thought this to be an altogether perfect place for our camp, and so it was until that memorable morning.

We were all sleeping comfortably on our scented spruce-bough beds when I was awakened by a strange sound. Fortunately, or unfortunately, as the case may be, I am a very light sleeper, a leaf falling on my tent or a little mouse skipping lightly over my face will awaken me instantly and as surely as a shell bursting near by. The sound that aroused me from my slumbers was a curious low grunt and not far away either. I sat up, shivering, for it was a cold frosty morning, and listened for a repetition of the noise. In a few minutes it came again and I was thoroughly puzzled. Was it a wolf, or coyote or perhaps a strange-voiced porcupine or even a black bear? Yet it did not sound like any of these, and so, filled with curiosity, I slipped on my clothes and boots and peered out of the open tent. It was very early in the morning, scarcely daylight in fact, and for a few moments I could see little beyond the pale blue-white mist which lay like a veil on the frosted country. Then three dark figures were discernible a short distance beyond my daughter's tent. Bears unquestionably, and yet they seemed too large,

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and I stared intently and felt that perhaps it was the mist that gave the effect of size. They *must* be black bears, of course, I decided and hastened over to ask my daughter if she wanted to see three black bears; certainly she did, for she is always interested in wild animals, and bears in their wild state were new to her, so up she jumped and drawing the sleeping-bag around her came and peeped out through the tent flap. I then went and awakened the guide by giving him a good shake, for he was a wonderful sleeper, and nearly frightened him to death.

As he looked out our three bears stood up close to the edge of the lake. The middle one was an immense creature, and the other two a little more than half her size. Black bears, not much, and we both called out "Grizzlies", and true enough that is what they were. An old mother grizzly and her two last-year's cubs. To say that we were surprised scarcely expresses it, for they were the very last animals we expected to encounter.

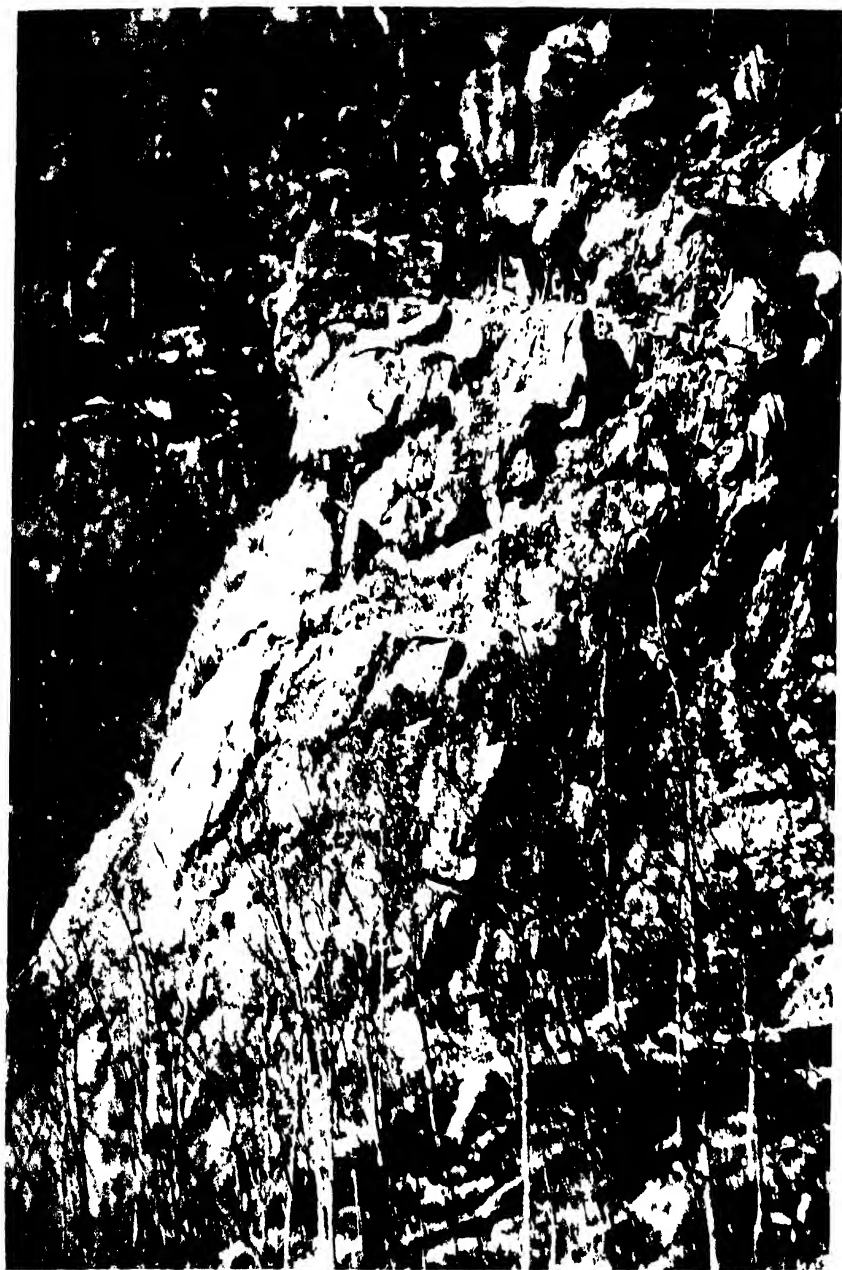
It was altogether thrilling, and I determined to see if I could possibly make a movie film of our visitors. One of my cameras, fitted with a long-focus lens, was up in the mountains hidden in my blind ready for photographing sheep, but fortunately my other one was available, though it was equipped only with a lens of short focal length. However, that was better than nothing, and I hastened to get the outfit ready.

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The light was very bad, so my only hope was that the bears would stay near by until the sun rose.

The three dark creatures paid little attention to us, they were looking for the remains of fish which had been thrown out into the lake. How they knew that there was anything to eat I cannot tell, for certainly the water must have prevented their smelling the fish. Be that as it may, the three bears waded out until their bodies were more than half-concealed by the water. I moved the camera slowly towards them and started to make the picture, when to my surprise all three bears headed toward the shore *in my direction*. Arguing with grizzlies is not one of my particular forms of amusement, so I moved back a little toward the tents. I was needlessly alarmed, in fact I was really not so much alarmed as I was cautious, as the guide kept on warning me to be careful because we were unarmed and, therefore, had no way of protecting ourselves, but the bears were not worrying about any of us. They wanted food and, what was more, they intended getting it.

To my dismay I noted that they were headed along the shore directly to where our butter and tins of fruit and milk were placed in a cold spring. This looked serious, but at the same time it might be the means of my securing some good film, so I waited until the three thieves reached the spring and then moved forward until I was about twenty yards from



Rocky Mountain. Sheep in their natural Home.

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the animals. I might add that this was entirely contrary to the directions of my good guide, who begged me to keep back for, as he said, in a most convincing and emphatic way, grizzlies were *very* dangerous. However, I am naturally pigheaded, also I am an optimist, and my good luck has always stayed with me so that I very seldom get killed. I wanted photographs, and this was my first opportunity to make a picture of grizzlies; perhaps it might be well to state with perfect honesty that I hope it will be my last. The mother bear, with one eye on me, and it was her evil eye I am sure, and the other on the food *cache*, was busy selecting something to her taste. A pound of butter seemed to be just what she wanted, so she lifted it from the water and biting off the paper proceeded to enjoy it. Butter may not be considered a necessity, but it is a most delectable addition to camp food, and when one happens to be two days' journey from the source of supplies it is by no means a pleasant sensation to watch the disappearance of the nice packets of creamy butter without having some say in the matter. The question was how could I give suitable and effective expression to what I wanted to say and not produce an undesirable finish? I had been told quite recently the story of how a man, only a year before, had met a grizzly face to face, a slight argument took place, with the result that the bear struck the man with such force that his head was literally torn from his body.

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This cheery little tale came into my mind with unpleasant persistence and made me do some rapid thinking, and I decided that I must put up a bluff as I was, of course, not armed. Unexpected action sometimes produces valuable effect.

Leaving the camera in position I made quickly for my tent, picked up a little axe and a pillow-case, neither of which is recognized as a strictly orthodox weapon against grizzlies, but there was nothing else available. With these articles, one in each hand, I returned to my post to find that the three dark-coated creatures were still enjoying their feast of butter. I made a rush towards them, brandishing the white pillow-case and the axe and shouting my loudest, and listening to the extremely uncomplimentary remarks regarding my sanity made by both my daughter and the guide.

The bears were surprised at the strange display. It was entirely new to their experience. First Mrs. Bear stood up facing me and a moment later Master and Miss Bear followed their mother's example. There was something so very comical about the three standing in a row, and simultaneously my daughter and I called out "Who's been eating *my* porridge?" for they reminded us of the story of Goldielocks. Tex Wood was worried at our levity, in fact he disapproved very decidedly, as he felt that he was more or less responsible for our safety. He did not realize that I had cut my eye teeth many years ago and was fairly well able to take care

of myself. Not knowing what else to do, and having a very well-developed respect for grizzlies, he piled fuel on the camp fire in an effort to create a smoke barrage. For a brief second or two (it *seemed* longer) we four stood facing one another. Then I tried to make use of the opportunity and get some photographs. This annoyed mother bear. She shook her long gleaming finger-nails and used some most unladylike language to the accompaniment of Tex's impatient calls to me not to be a damned fool and to come back while yet it was possible. But I know animals much too well to turn my back on them when their attitude is threatening, it would simply have precipitated the attack, a thing I never like to do. The only thing possible was to remain as I was and hold my ground, though to speak frankly the situation was most disturbing to my peace of mind. What the result was going to be I did not like to think, but, as usual, I was doing my best to be optimistic. Usually one's attitude of mind has a lot to do with the results. If you *expect* to be killed, you are more than likely not to be disappointed. I once stood up against a dozen rifles, all pointing at my unfortunate body, this was during the 'troubles' in Ireland. The chances were, of course, entirely against me, but I persisted in my optimistic outlook, and, well, here I am, a living proof that my theory is correct.

For some time the bears and I looked intently at

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each other, then to my horror mother made up her mind that something must be done and done there and then; she dropped on all fours and instantly headed straight for me, to the utter consternation of the rest of my party. To have made a move would have been fatal, yet did my feet feel possessed of wings, and it was not easy to keep them on the flower-strewn ground. But this was absolutely necessary if I did not wish to settle permanently in the Rockies. What I hopefully expected happened. The great bear, and she looked monstrously large, after coming a few yards became bewildered, she apparently suspected there must be a trick somewhere; had I run it would have been more in the proper order of things, and she would have quickly overtaken me and my troubles would have been over for ever and without undue loss of time. When about twenty very short yards away she suddenly stopped, stared, made use of some more bad language and then slowly turned her back on me, and really that back was a beautiful sight, one that I could and did appreciate to the utmost! The old thief with her youngsters returned to the spring, and the next thing I knew she was taking out a tin of California pears. The label having been washed off by the water, I was at a loss to understand how she knew what the tin contained. Certainly she could not smell through the metal casing, but she proceeded in a methodical manner to bite holes through the tin,

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not having a proper can opener with her, and drank the sweet juice with evident relish, though I cannot say that I derived any great pleasure from her action, for I, too, like pears. Having drained the can dry, she carried it into the woods and dropped it. Then to my, I should say our, great relief the three bears decided that having had fruit juice and butter, a little fish should be the next course in their breakfast fare, so they went into the water and searched diligently for fish heads and parts that had been thrown away.

They made a most interesting picture as they moved about slowly in the calm lake, their dark bodies in strong contrast to the pale mist which hid the mountain background. After exposing some more film I proceeded to search for the tin of pears, and eventually this was found and we had the fruit for breakfast. Thus did we share our food with the grizzlies, a somewhat unusual experience. The tooth-perforated tin served as a useful and probably unique soap-box.

The fact that the bears had found our camp was annoying, as it meant that they would be more than likely to pay other visits, and consequently our food supply would be in constant danger if none of us were about to guard it. So after that memorable morning it became necessary to hoist our provisions high up in a tree, as grizzlies do not climb.

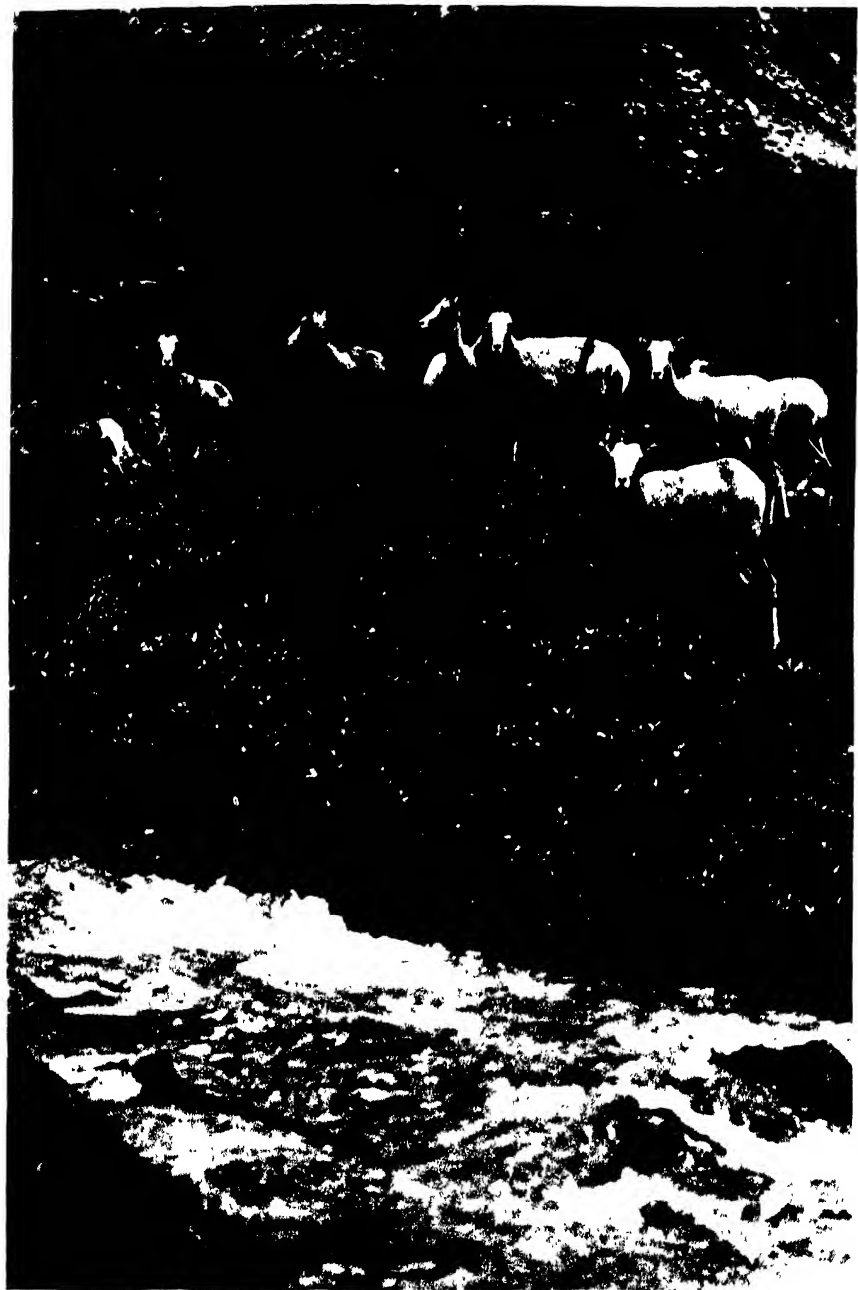
Another result of that morning's visitation was that I did not feel that it would be safe for my daughter

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to wander about alone as she was accustomed to do, and particularly was it advisable for her to give up fishing alone. Fish attract the bears, and I confess that I was somewhat nervous, and we arranged that it would be better for me to do more of my work by myself while the other three kept more or less together.

I may add that on several occasions the bears returned. One morning they came into the camp just at dawn. I heard them moving about, but, as there was not sufficient light for photographing, I kept to my bed. The food had been all carefully secured overnight so there was nothing to worry about, though when I heard metal striking something hard I wondered whether our cooking utensils were in danger. An hour or so later, on getting up, I discovered that the pan of sheet-iron belonging to the reflecting oven was missing. It had been taken from within about three feet of the guide's head, only the canvas wall of the tent having been between the man and the bear. The man had heard nothing. His expression was amusing when he learned how close he and the bear had been. When I recovered the pan, which had been dropped in the woods near by, I found that it had several holes made by the animal's teeth. This gives some idea of the strength of the jaws of a grizzly.

We heard later that a guide who was riding out to Banff had encountered our three friends, and that they



A Group of Rocky Mountain Sheep.

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had taken possession of the trail and forced him to make a wide detour in order to continue his journey. We had been remarkably fortunate in having seen the bears, as they are rare in that part of the country. Our friend, Mr. Belmore Browne, the artist, who has spent eight or nine years roaming about the mountains within several days' riding distance of Banff, told me that he had never seen a grizzly in the district, while we had had the good luck to meet them during our first week or so of camping.

During our two weeks' stay at Sawback we had enjoyed every moment of our time. I secured about one thousand feet of film of sheep, some of which showed the animals at very close range and in good groups; but though I had plenty of ewes and tiny white lambs I had bad luck with the rams, no large ones having come within range of my various blinds. The salt trail worked well and brought the animals to where I wanted them, so that the backgrounds were satisfactory. My daughter made good use of her Ciné Kodak and succeeded in making excellent pictures of the sheep, sometimes as close as fifteen or twenty yards' distance. We had great fun doing this together, and photographed one another stalking the animals among the rocks.

In some ways the thing that gave us the greatest pleasure was watching the black-tail deer; these exquisitely beautiful creatures would come round the

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camp to within a few feet of us, showing no fear of their former enemy, man. They had learned that they were protected, that their lives were safe from the deadly rifle, and we never tired of watching them. Occasionally, while I was engaged in painting the wonderful scenery or my daughter was fishing, they would come close to us with complete confidence that they would not be hurt, and how much they added to our pleasure cannot be expressed in mere words. Nothing that has been done in that country is more worth while than the prohibiting of shooting, for not only is shooting forbidden but the law is really enforced and, therefore, effective. The result is that throughout the large protected area most of the animals are as tame as though they were in parks, and may be seen in all the beauty of their natural home, and more beautiful or grander settings are not possible to imagine. This is the sort of zoological garden that must appeal to every lover of Nature, and incidentally make us wonder how anyone can find pleasure in shooting. This is especially true of the deer. When their great dark eyes gaze at you inquiringly as though asking mutely whether or not you may be trusted, the very thought of taking their innocent lives seems abhorrent. They are so much more fascinating and interesting alive than dead that to kill them is but an act of stupidity and savagery. Thank goodness more and more people are beginning to take this point of view. Sentimentality



A Sheep and her two Lambs, photographed in July.

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it may be called, but after all it is plain common sense.

Having secured more or less what I wanted, it was decided that we should make our way back to Banff, so with heavy hearts we packed up our outfit, and while engaged in this sad task, for we loved the place and hated to leave, our three grizzly friends paid us a farewell visit. Unfortunately, however, they would not come out in the open, but for an hour or two prowled about in the thicket which formed one side of the camping ground, coming sometimes within a few yards of the tents, but never once giving me an opportunity to use the camera. This was most disappointing, as it was the only time I had seen them when the sun was up and shining.

The following morning bright and early we bid good-bye to our delightful mountain camp, to its animals, its flowers, its fishing and its splendid remoteness from the din of modern civilization. My daughter's ardent wish had been realized, she had ridden with the picturesque pack train and camped in the great and glorious Rockies. Her dream had come true.

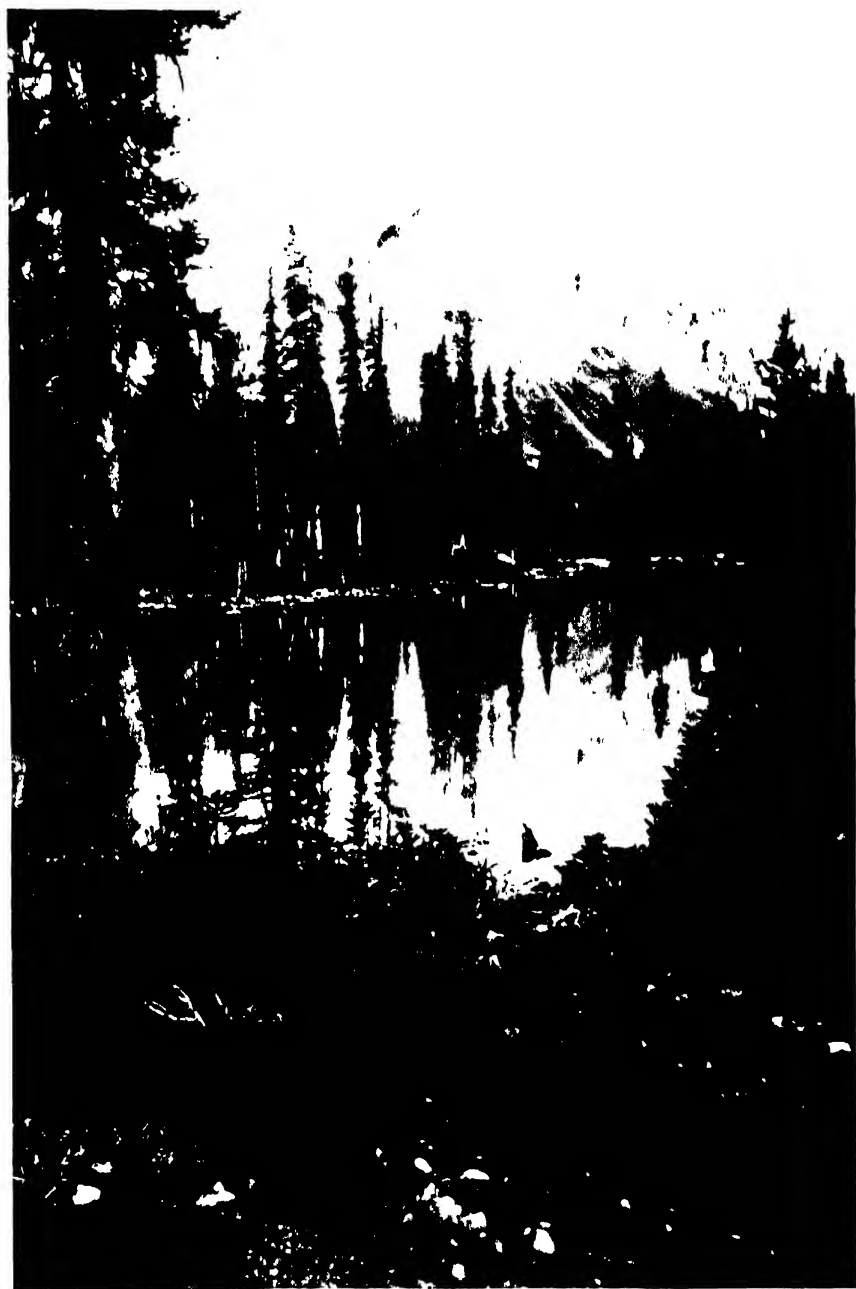
Our trip back was as uneventful as it can be with pack horses. These, of course, gave the usual amount of trouble with their natural jealousies and determination to do all that was possible to relieve the monotony of the trail.

The season for photographing wild animals had

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passed, for now most of them, especially the sheep, were busy shedding their long thick winter coats and looked moth-eaten and thoroughly untidy. I decided, therefore, to devote the following month or so entirely to painting. Lake O'Hara, that Jewel of the Canadian Rockies, was our first objective, and the wonderful two weeks spent there in the comfortable bungalow camp passed only too quickly. It was two weeks of perfect joy for us both, for nowhere in all my travels have I ever seen anything more completely beautiful, and I painted from morning till night. From there we moved to that grand spot, Moraine Lake, known also as the Valley of the Ten Peaks. Here I devoted a good deal of time, when not painting, to the difficult task of making photographs, 'movie' and still, of those strange little creatures the rock rabbits (Pika or Little Chief Hares). From Moraine Lake I went to Lake Louise and later back to Banff, as it was time to be thinking once more about photographing the animals. The sheep had not yet finished shedding their old coats, but moose had well-grown antlers and were in good condition, with the mating season almost due.

Once more we went on the trail, this time with Charlie Coolie as guide—an excellent one, too. Our objective was Spray Lake, a short two-days' ride in a southerly direction. There I was told that I should find plenty of moose under conditions that would prove satisfactory from a photographic stand-



Cathedral Mountain from Lake O'Haua.

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point. On arrival early on the second afternoon it was encouraging to see a cow moose in the marshy stream near which we made camp. It was my daughter's first sight of one of these strangely built animals, and of course it gave her a thrill, even though the creature was so conspicuously lacking in beauty with its overdeveloped nose. The following morning Coolie and I went off on our horses to look over the country and see where it would be best to establish the blind. It was evident to me that stalking would be out of the question owing to the marshy nature of the broad flat valley through which the stream wound its tortuous way, with densely wooded mountains rising abruptly on either side. Riding along the trail on the western side of the swamp we had a good view of the open area, and soon we had the satisfaction of seeing two fine bull moose and a cow, but though they were several hundred yards away they took fright and quickly disappeared. However, the fact that they were there was hopeful, and I had visions of getting some good film. I selected a splendid position for my blind on a fairly high point which ran out into the swamp on the edge of a shallow pond. Unfortunately the hopeful prospects proved a delusion. Everything was satisfactory except the animals. A few appeared now and then, only cows, and these were wilder than I have ever known moose to be. I was at a loss to find a reason for this condition until I discovered that

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the game and fire-ranger kept a large dog, and that this dog could never resist the temptation to chase the creatures. Even the few black-tailed deer were unusually shy, and I was forced to the conclusion that time spent there would be wasted. My daughter managed to get some good sport with the trout, so she enjoyed herself, though I confess I did not, for I hate to fail. It was early September, but the cold during the nights and early morning was intense, the tents were coated with ice and even the water in buckets near the fire froze before our very eyes.

At the end of six days I decided to leave the Spray Lake region and turn my attention to elk in the country near Banff. By making a very early start we hoped to cover the distance in one day, but things do not always work according to plan. The horses had their say in the matter and began the day by bolting as soon as they saw the first gleam of dawn, leaving us with only one which had been fenced in as an inducement to the others to remain near by. Coolie's faith in horses had been sadly misplaced, and he gave vent to his feelings towards the entire equine race in general and to our special lot in particular by a flow of language, which was, to express it mildly, very picturesque and completely lacking in repetition, each sentence was filled with a new and uncomplimentary assortment of adjectives which caused the still cold morning air to vibrate, all of which was an accompaniment to the

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task of saddling the corralled single remainder of our outfit. It was some time later before I heard the jingling of bells in the distance; the sound was a welcome one, and it told me that I could now have breakfast ready.

Eventually we did manage to get started, and though the animals gave us a certain amount of trouble by trying to rub the packs off against convenient trees and generally making nuisances of themselves, we made good speed until lunch time. As ill-luck would have it, we selected a delightful place on an island formed by two rivers. The scenery was perfect, the air clear and clean and our appetites in excellent condition. Time was valuable, so we did not delay, and within an hour or so got under way. Just exactly what happened during the next few minutes I cannot say with certainty. A horse broke ranks. Coolie swung round to retrieve the wanderer, whereupon all the animals thought that this was their opportunity for a display of independence, and each one left the trail and headed for the tall timber with my daughter and I after them. Suddenly I heard a huge splash, followed by a burst of violent vituperation. I rode down as quickly as possible through the tangled undergrowth until I came to the bank, and there beheld a mix-up of two horses, a man and rapid-running water, to say nothing of language. One look was sufficient to satisfy me that fortune had played a scurvy trick, for the horse laying

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on its side in the water was the one on which all my photographic outfit was packed, and this outfit was now enjoying a quite unnecessary and very undesirable bath. Coolie worked hard, and before long the dripping horse was ashore and we were busy getting the pack off and ascertaining the extent of the damage. As good luck would have it my cinema cameras were made entirely of metal, and as I emptied the water out of them I blessed the firm of James Sinclair for the excellence of their work, for beyond a short piece of film which was soaked, no harm had resulted to the outfit, and within half an hour or so we were on the trail once more, laughing over the experience, but keeping the horses very definitely to the trail and making them move at their best speed, so that we reached Banff at dusk.

For the next two weeks I devoted myself to the task of trying to make paintings and photographs of elk. The rutting season was in full force and the constant bugling of the bulls could be heard almost continually in the Bow Valley. Sometimes the sound was much like the braying of an ass, then again it had a strangely musical note, but always it was difficult to locate. The animals themselves were extremely shy and nervous, and as they stayed usually in the thick undergrowth photographing them was difficult and unsatisfactory. Never have I worked harder with less result. It was mid-September and the country was at



An Elk Bull.

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its best. The whole valley was a blaze of golden aspens, with richly coloured undergrowth and dark evergreens. The mountain sides, which formed the background, were fascinating in their range of colours, each sheltered gully bordered by dark green spruces was like a streak of brilliant yellow paint starting in a fine line high up the rocky mountain and gradually broadening out where it joined the golden valley through which the Bow River wound its way to the plains below. Now and then in a gilded glade a magnificent bull elk would show himself, his great mass of horns spreading like a tree over his dark head, to be tossed from side to side as the highly wrought animal searched for a mild-eyed doe or for a possible rival. A sudden bugling in the near-by trees and the great animal would stand like a statue, with head raised high and nostrils distended. Then the challenge would be sounded, to be taken up from near and far by other bulls, so that the woods echoed with the strange calls. A moment's glimpse of such a sight repaid one for the miles of careful stalking, even though it was usually impossible to use the camera. At the slightest move the great deer would take alarm and trot away and be lost in the underbrush.

For many days I wandered about through the glorious valley armed with the heavy camera, but scarcely ever succeeded in making any film. Once I found a doe sleeping on a small island, and after some difficult stalking managed to get within reasonable

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range, twenty yards or so, and there set up the automatic cinema camera and started it going. The slight sound awakened the animal and it rose slowly, looked about and then stepped off the grassy island and walked through the shallow water towards the mainland. It made a delightful picture, and my only regret was that it was not a bull. Then, indeed, I would have been happy. For several days I hid in a blind on this island, but luck was not with me, and beyond getting some useful sketches I had nothing to show for the hours of patient waiting and shivering in the cold draughts that blew through the valley that was shadowed by the massive Rundle Mountain.

Altogether my attempts at elk photography were disappointing, though the experience was interesting and I was glad to see how well the animals were doing since they had been brought into the district. If they continue to thrive as they are now doing, the time will come before long when they will repopulate the country and probably become too numerous, such is the effect of stringent game protection. It is interesting to note that these particular elk, or wapiti, are magnificent examples of their species and are developing really fine antlers, a proof that the region agrees with them. I hope some day to return to this country and devote more time to studying these finest of all the deer, then perhaps I may have the luck to witness a fight between two large bulls. My friend, Belmore Browne, when



Cox, F. F. ch'ung her, Cuo

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camped in the valley below Banff was fortunate enough to see such a combat by moonlight. His description of the picture has caused me deep envy, as it must have been a wonderful sight and one that is but rarely seen.

I had been making inquiries as to where there would be a chance of finding moose, and finally was told of a place on the Ottertail in British Columbia where there would be conditions favourable for my work if I went there before the shooting season opened, as this was outside of the game reservation. Accordingly I left Banff on September 25th for Leancoil, a station westward of the Great Divide. Here I arranged with a guide to take me to what he described as a wonderful place. The shooting season would begin on October 1st, so there was no time to lose.

After a few hours' ride we came to our destination, and it certainly was a strange place. A flat area through which a very small stream trickled, evidently it was the site of an old beaver pond. The ground, which was almost black, was like a roughly ploughed field of peat. It was treacherous ground and walking was dangerous, as in parts it was like a quagmire and apparently bottomless. The strange thing was that there was no way of telling where it was safe to go, as it all looked alike and all equally unpleasant. The ploughed effect was due to the stamping of many moose, so that was hopeful, but what I could not understand was why they should come here. There

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was little or no food, yet from the tracks and the torn condition of the low-growing spruce trees there was every reason to believe that this was a regular resort for moose, whether at all seasons or only during the mating period I could not tell; that the place would prove interesting I felt reasonably certain, though the chance of getting photographs was, of course, a gamble.

The first thing to do was to make a blind, and this proved somewhat more of a problem than usual owing to the uncertain condition of the ground. The open area was rather more than a quarter of a mile in length and two to four hundred yards wide, the further side was edged with grass, beyond which a scrubby growth led gradually to the mountain slopes. On the side where I was the peaty ground was dotted about with rough spruces singly and in groups and bordered by an abrupt forest-covered hill. The ideal position for the blind was in one of the small clumps of spruces, but most of these were inaccessible to man owing to the quagmire. After some difficulty I succeeded in making my way to a group of four or five stunted trees, where I arranged my outfit so as to command a fairly comprehensive view. The question of the direction of the wind must be left to chance. In the event of rain the place would be useless as, according to the guide, even a moose would find difficulty in walking over the treacherous ground. However, the chance of rain was remote, the extreme cold was a



Cow Elk standing in a Stream.

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guarantee against it; snow was far more probable. That night the temperature fell to somewhere near zero and morning found everything frozen. Shaving in the ice-cold spring water was anything but a joy, but I was in such a hurry to get into the blind before daylight that I lost no time in heating water.

During that day and the following ones I spent all my time in the hiding-place, and had the satisfaction of seeing a fair number of moose, but none came within suitable range of the camera except one bull and he arrived while the sun was just clearing the tree-tops, and for half an hour the wretched creature remained exactly between me and the sun, so that it was impossible to use the camera. Several cows came within reasonable distance, but I refrained from photographing them. So long as they stayed there was always a chance that the bulls, attracted by their presence, would come, and if two should happen to arrive at the same time a fight might possibly take place. One morning my hopes were almost realized. Two bulls appeared, one on either side of me; both were in a nervous condition and each resented the presence of the other. An old cow with her last-year's calf was feeding not far away. I was so thoroughly excited at the prospect of what I felt sure would be a fight that I remained absolutely motionless, making no attempt to use the camera for fear of revealing my position. The larger of the two bulls passed about thirty or forty yards from my blind,

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moving forward only a few steps at a time. After a while he came to a small group of torn trees and standing behind one of these stood still, with head down in a most dejected attitude. Before long he began to eat the black peat, making a strange sound as he did so, somewhat like a pig rooting. Then he lay down and rubbed himself in the earth. After getting up he tore the bark and branches from the trees and then started forward across the open to where the other bull had been standing. A fight seemed to be the only possible outcome of all this preliminary behaviour, and I regretted the fact that it would probably take place fully a hundred yards away, too far to get a really satisfactory film.

The two animals, both having fairly good heads, rushed towards one another, stopped when a few feet away and then to my surprise quietly walked past each other in a most casual sort of way. The larger one went into the bushes and began feeding, the other rushed towards a small dead spruce tree about twenty feet in length, knocked it down, picked it up on his horns and carried it for some distance, then, dropping it, made several lunges at the prostrate trunk, striking with such force that each stroke could be plainly heard across the marsh. Having thus vented his temper he quietly moved off. It was a most surprising and unsatisfactory end to what had promised so well.

On another morning I was suddenly startled by hearing a crashing sound in the forest behind me.



Elk and Does in the Canadian Rockies.

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The next moment a very fine full moose, light grey in colour and with fine antlers, appeared. Before I could swing the camera round he had made his way to a cluster of trees perhaps thirty yards away. Behind a particularly dense spruce he stopped, and I could see only a part of his massive head. Of course it would be only a matter of time before he would leave this shelter and I would be able to get a fine film. That, at least, is what I thought. Whether or not the great beast was suspicious I do not know, but I realized that with the shifty currents of air he might easily get my scent. I must, therefore, be extremely careful not to let him discover my whereabouts. For nearly an hour I stood motionless with my face glued against the metal camera and then at last I saw that my friend was going to move. I tried to withdraw my face from the camera in order to see the view-finder, but, strange as it may sound, I had frozen to the metal. Evidently my breath had condensed in the bitter cold and ice had formed a connecting mass between my skin and the instrument; before I could release myself—a painful operation it was, too—the bull had passed slowly across the open space and once more had taken cover.

My chance had gone and I was bitterly disappointed. The cause of the failure was one that I should never have thought possible. I wonder sometimes whether there is any limit to the number of causes for failing to secure photographs of wild animals. Precautions

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may be taken with almost ridiculous care and yet something will happen to spoil the picture. I remember trying at one time to make flashlight photographs of African animals at waterholes. In order to save valuable time, as I was out in search of game all day, I thought it best to set cameras with delicately adjusted thread releases, so that, while I slept, they would be tripped by any visiting animals. Each morning I found the flashlights had been fired, but on developing the plates there was nothing but a picture of a pool, with no sign of any living creature. I was completely at a loss to understand what had touched the threads. One evening I waited near by after having set the outfit and then discovered what happened; birds, chiefly doves, coming down for a last drink before going to roost, hit the threads with their wings. To guard against this happening again I set the carefully waxed threads *under* water. The following morning, on visiting the pool, I was delighted to find lion tracks in front of the cameras and see that the flashes had been fired. Naturally I felt confident that my ruse had worked and that I had secured photographs of the visitors. Needless to say, I was excited and hastened to develop the exposed plates, only to find good pictures of pools and no lions. This was a puzzle and one that was difficult of solution. Another evening's careful watching revealed the cause: frogs sitting on the threads had tripped the shutters and wasted my diminishing



Climbers of the Rocky Mountains.

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supply of flash powder. But who could have imagined that this would happen? Apparently one can never foresee all the possible causes of failure. It is the endless struggle against difficulties, known and unknown, that makes animal photography so fascinating and the securing of a really successful picture an achievement of which to be proud. In my experiences with the moose there was always something which prevented my getting just what I wanted and yet on several occasions I *almost* succeeded, but never quite. If the animals were in the right position they were either out of range or behind trees, or between the sun and the camera, or else it was too late and the light inadequate. Had I been using a rifle any one of the bulls would have fallen an easy prey.

I was interested in observing the great variation in the colour of the moose that visited the curious peat swamp. One was almost red, one pale rusty grey with almost white legs, several were nearly black with light or dark grey legs, and some were fairly dark greyish brown. Usually the legs were lighter in colour than the moose of the eastern provinces and states and I think the bells, especially on the cows, were longer. It was unfortunate that I had not known of this curious place sooner, as I feel sure that it would have yielded some good results in the way of photographs and notes on the animals' habits, but I was forced to cut short my stay owing to the arrival of shooting parties in

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anticipation of the open season. With these people about photography was out of the question, so there was nothing to do but pack up and return to the vicinity of Banff, where I hoped to do some more sheep photography. The mountains were getting more and more heavily covered with snow, consequently the sheep were seeking the lower ranges.

Strangely enough the country north of the Banff-Louise road is one of the best places for the photographic hunting of sheep. The scenery is magnificent, the animals at times are abundant and fine old rams are not uncommon during the late autumn. Another great point is that as a rule they are easier to stalk than in the more remote districts. In fact, there is one small herd of ewes and young rams that frequent a certain slope and swamp, not more than four or five miles from Banff, that are so absurdly tame that they will sometimes allow themselves to be touched by people. Consequently they are easy targets for cameras. Unfortunately, however, they are a poor moth-eaten lot which do not do justice to the species. I was greatly surprised to find this lot spending so much time in an alder swamp, the last place I would expect to see sheep. This swamp was also the home of a beaver family. With luck one might quite possibly have made a picture of the sheep with a beaver dam in the background, a curious combination. Regarding the beaver, which are fairly common throughout the Bow Valley, I was



Rocky Mountain Sheep: Mother and Baby.

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struck by the fact that though dams were frequently seen, all were small and there were no lodges or houses, and I found no stores of winter food notwithstanding the lateness of the season. Evidently the animals live in burrows, but what they do for food during the long severe winters I cannot tell.

The last few days of my stay in the Rockies were devoted to sheep photography and painting and after a good deal of difficulty I managed to secure some fairly satisfactory material, but by bad luck whenever I found the fine old rams, which I was most anxious to portray, the weather always behaved badly or else my heart gave me trouble and prevented my climbing after them. The finest subject I saw and which is reproduced in this chapter, was the pair of old rams standing on a rocky slope gazing on the valley below. With even reasonably good weather conditions they would have made a fine picture, as I managed to get to within about thirty yards of them before they saw me, but unfortunately the rain was coming down in torrents and it was so dark that I could scarcely see the objects on the ground glass. Therefore the picture, though interesting, falls very far short of what it should have been. For several days I haunted the place, but the rams never appeared again.

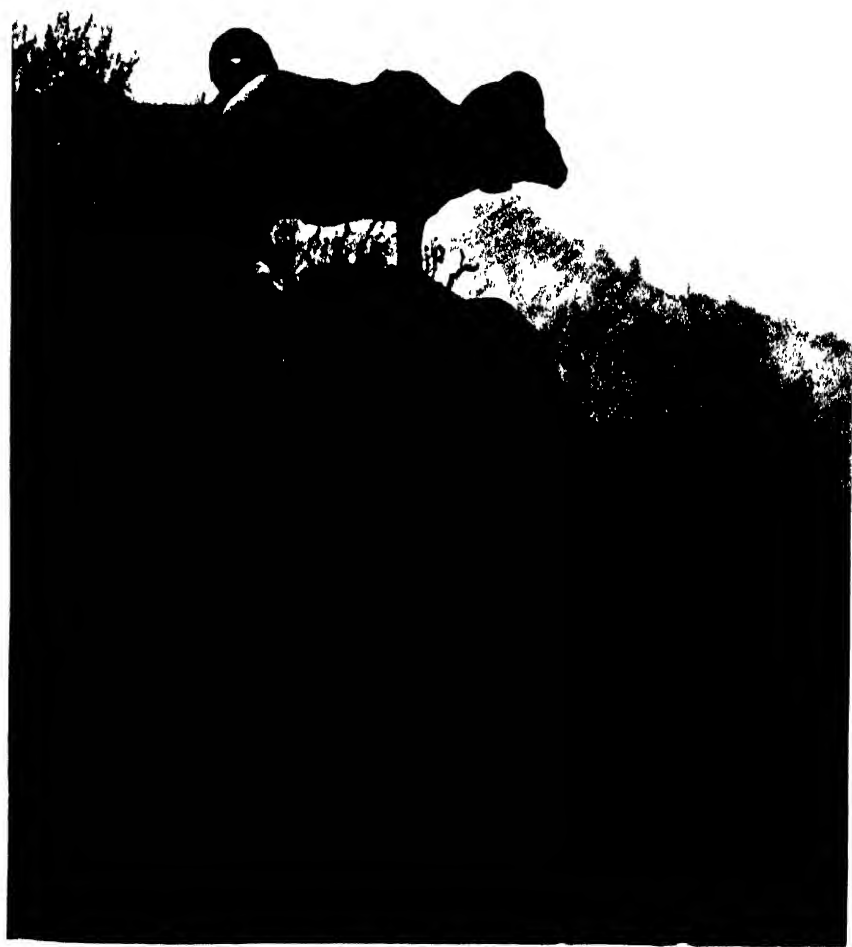
As a trophy for the camera hunter the Bighorn sheep of the Canadian Rockies is well worth trying for. Not only is the animal itself imposing with its

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massive horns, which run to eighteen inches or more in circumference at the base, but it is almost always found in settings which, even without the animal, make fine pictures, and with care, luck and persistence a good background can usually be found. Strangely enough it is very rarely that a Bighorn has the horns complete to the points. They are practically always rubbed or broken off, whereas its near cousin Stone's sheep (*Ovis Stonei*), whose southern range adjoins the northern limit of where the Bighorn is found, usually has the horns complete, this is true even of the very old rams. Why there should be this difference between two such closely allied species is one of the puzzles to which apparently no one can answer.

Before leaving the subject it may be of interest to give the *approximate* size of these animals: height forty inches at the shoulder; length, without tail, fifty-eight inches, and weight about three hundred and twenty-five pounds. These figures, though subject to considerable variation, will serve to give an idea of the proportions of the Rocky Mountain sheep, while the accompanying pictures will show what they look like both in early summer and in the autumn.

With the coming of October our time was up, and I had to head eastward for New York to get ready for my exhibition of paintings. We had spent a wonderful fourteen weeks in one of the finest countries in the world. Scenery, flowers, fishing and animals, each had



A pair of Big Horns on watch: taken during Heavy Rain.

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contributed to our interest and pleasure, but in some ways the best part of it all was seeing wild animals, of species usually considered unapproachably shy, turn without fear towards their old enemy man; to see black-tail deer, shy, beautiful creatures, walk about the streets of Banff, dodging hooting motor-cars; to see the stately elk watching golf being played on the million-dollar links, and sheep posing for their photographs alongside a main road all sounds absurd, like a fairy story, and yet it is all true, delightfully and unbelievably true, and it has all happened within but a few years of careful game protection. That the effort has been worth while is proved by the pleasure given to the thousands of visitors to this glorious country, while the animals themselves, no longer fearful of the sight or scent of man, revel in a life of peace and happiness, a pleasure to themselves and to their former enemy.

Chapter III

The Moose of Eastern North America

IN the wild and limitless forests of Eastern Canada and the United States the greatest game animal from the sportsman's point of view is the mighty moose, close cousin of the elk of Northern Europe. Many lovers of the rifle have the ambition to kill one of these large deer and secure a fine head; they dream of the day when they will be able to point with pleasure and, strange to say, even with pride to the dust-collecting evidence of their skill, whose glass eyes seem to look, day and night, in a wondering way, mutely asking why the slaughter of so fine a beast should be regarded as a worthy accomplishment.

The unfortunate moose does no harm to man or beast, he lives in forest land away, so far as possible, from the haunts of man. No animal is less destructive, but he carries a wonderful pair of antlers and for these he is shot. At first glance the acquisition of these antlers would seem to be the reason, but if we look further into the question we may find that there is another and perhaps even more powerful motive that urges the hunter to go after this largest of the deer. In many cases at least it is rather the desire to go out

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into the forest, to live in the open air and get away from the dreary excitement of our modern civilization with its everlasting problems, competition and perplexities. The animal is the excuse and the excuse pays the price.

In former times little thought was, apparently, bestowed on the actual killing of animals, that was taken for granted, for we were nearer to the days when men shot for food because it was frequently a necessity. But to-day things have changed; more and more do people resent the taking of life, even under the name of sport, and especially is this true of the larger animals. We have learned that they are so much more interesting alive than dead, that a photograph of any creature in its wild state is more beautiful than the mounted head. And so, to-day, hunters find that they can satisfy their craving for the wild woods and their instinct for the chase by substituting the harmless camera for the more deadly rifle, and that by so doing they need not worry about game laws and seasons. Their bag is never full, for there is no limit to the number of pictures that may be taken. Then again, the overcoming of difficulties, always a desire of the true sportsman, is far greater. Stalking must be carried out with greater skill because a much nearer approach is necessary. Light and composition must be considered; in fact, where you have one thing to think about in shooting you have dozens when using the camera.

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Years ago I realized the sporting possibilities of photographing big game; back thirty years ago, when cameras for such work had not been developed past the experimental stage, I went on long trips through Maine, New Brunswick and Ontario, filled only with the ambition to make photographs of living things in the wilds, and my great hope was that I might picture the moose in all the glory of his native home.

Guides, when I happened to have them, treated my efforts with scorn or even contempt; what was the use, they said, of taking a lot of trouble to find a moose only to let it go again after merely clicking a stupid camera shutter? They had never seen anything of the sort done before and saw no sense in it. Sometimes they were even openly antagonistic, as they declared it made the game wild and consequently more difficult to shoot. Others went so far as to try to have laws passed to prohibit the use of the camera in connection with deer and other so-called game animals. Such was the attitude in those days. Now that has all changed and many of the guides themselves take the utmost pride in making animal photographs, and some go so far as to prefer going with the modern bloodless hunters rather than with those whose object is to kill. Whether this change of attitude is due to the influence of the war, which made people realize what killing really meant, or to a normal development of education and civilization or to the increased interest

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in photography and consequent improvement in camera equipment, there is no way of determining. The mere fact that it does exist is sufficient and is a source of gratification to those among us who were the pioneers in this newer form of big and little game hunting with the camera.

I even dare to predict that the day is not so very far distant when the killing of big game will have become a thing of the past and photographs will take the place of heads and horns, when men and women, too, will vie with one another in their healthy competition to make picture records of unusually fine heads or particularly fine or peculiar specimens. It is easy to laugh at such a prediction, but this is a period of rapid changes, not only in scientific inventions but in thoughts and customs.

But I am wandering away from the subject of this chapter and must return to the trail of the moose. In habits these mighty deer change with the seasons. During the spring and summer months they usually spend much of their time in the vicinity of water; shallow lakes and swamps are their home, because in such places they can find food in abundance. They live chiefly, during this season, on the leaves and stems of the spatter dock and water-lily and on the lush grasses to be found in and near water, and on young twigs of deciduous shrubs and trees. They do not, however, eat the roots of the spatter dock except the

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extreme ends, so far as I have been able to observe, notwithstanding what I have read and heard to the contrary. I have spent hours watching the animals feeding and so far have never seen anything but the leaves and stems being eaten, the roots, frequently pulled up from the soft boggy bottom, were cast aside to drift ashore. In order to procure this food the moose will go into fairly deep water, even out of his depth and feed while swimming, but more usually they stand with bodies partly submerged and put their heads under water. Occasionally the whole animal vanishes from sight and one sees a great head suddenly appear in the middle of a lake when a moment before there had been nothing in sight.

Needless to say, they are thoroughly at home in the water and can swim with such speed that two men paddling a light canoe can little more than keep up with them. They can also negotiate soft mud with astonishing success, though at times they find conditions so difficult that they have to make heroic efforts to struggle out of the clinging muck, but I have yet to see one completely bogged.

It is during these warmer months that all the animals of the northern woods are tortured by flies of various kinds, from the large moose fly, which I have heard described as being 'as savage as a bulldog', to the equally persistent black fly, which in their myriads attack all warm-blooded creatures. To avoid these pests the



A young Bull Moose swimming with such Speed that it was no easy task to keep up with him in the Canoe.

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moose will frequently stand in the water during the heat of the day rather than seek the cool shelter of the dark forest where the flies are at their worst, as there is no wind to disturb them. It is also during this season that the bull moose grows his annual pair of antlers. These begin to develop in the early spring and with remarkable speed continue to grow until, by September, they have attained their extraordinary size, which may reach as much as fifty inches or more in spread in the case of the eastern variety. (Those in Alaska reach the astonishing width of nearly seventy inches.) The drain on the animal's vitality caused by this great growth of bone must be very severe. The method of this growth, which is peculiar to all the deer family, is one of the most interesting features in the life of any animal. It begins with a swelling over the pedicle, which looks like a dark-coloured young mushroom; gradually the outer walls harden into a bony structure, in the centre of which is a mass of tissue composed of blood-carrying supply veins or membranous tubes, which carry the bone-making substance (calcium and phosphate salts) upward. These, as the growth continues, become first cartilaginous and finally turn to bone. Encasing this bone structure is a coating of sensitive blood-filled skin, commonly called velvet. This is covered with fine hairs and is extremely sensitive and serves as a protection to the actual antler, not only against contact with hard substances but being

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actually a skin, as proof against the attacks of micro-organisms.

Throughout the summer months the growth of the antlers continues. This being the period when food is most abundant the animal is able to obtain, without difficulty, the nourishment necessary for the demands made by this growth, just as with the females of deer that require extra sustenance to supply the milk necessary for their young. Nature regulates the lives of the wild creatures with the utmost care and forethought.

By the middle of August the growth of the moose's antlers is completed. Then follows a period of hardening, and when this is over the velvet or skin, no longer needed for protection, dries and becomes detached. The animal that has for months carefully avoided any contact of horns against hard substances now rubs his newly acquired decorations against tree trunks and branches with increasing vigour, until by the early part of September the antlers are scraped clean and even polished at the tips by frequent friction.

It is now autumn; the maples are turning red and yellow, the birches are a golden glow and the cooling nights are encroaching noticeably on the length of the days; the mating season is at hand and the great antlers which have been grown with such care during the past months are now to be used for the purpose for which nature designed them: for the proof of strength and fitness which is the determining factor in the selection

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of the sire of the next generation. (This subject has been more fully dealt with in the chapter on the caribou.)

During this season the habits of the moose go through a complete change. No longer do you find the bulls in the ponds and swamps, even though the cows frequent them to some extent, but the bull takes to the forest or hard wood ridges or to the burnt land, if there is any in the neighbourhood, and unfortunately there is usually only too much of it. The great beast is not the dull creature of the summer months but a nervous alert monster, ever in search of a mate, and the mates strangely enough are inclined to be shy and hide in the dense undergrowth. This is the time when those who would shoot go forth, for they can now use that rather unsportsmanlike method of 'calling', with the aid of a birch bark horn, imitating either the gentle voice of the cow or the challenging cry of a possible rival bull, the cry that so frequently stirs the stillness of the quiet autumn evenings or nights, and is one of the few sounds made by the wild beasts of the country. There is something disturbing to one's sense of the proper fitness of things in man's calling of moose, the taking advantage of the love passion upon which nature relies for the continuation of a species. Imagine a magnificent bull searching for a possible mate, perhaps the full moon is casting its soft glow over the northern forest and the moose with all his senses keenly alert hears the deceptive call. If it is like that of a bull

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he sees the possibility of a rival and hastens forward to do battle and prove his superiority; if the sound is that of a cow he must approach with care, for other bulls may have heard the invitation and they may be bigger and more powerful than he is. So he approaches noiselessly, taking care not to strike those ever-present fallen trees with his large hoofs, or a branch with his wide-spreading antlers. Perhaps the call has not been given by an expert. There is a somewhat unconvincing tone, or it is overdone (a common mistake). It may be true and it may not, and so he comes towards it with even greater caution. But for the sake of the picture let us consider that the man who is well concealed, knows what he is doing and imitates an alluring call of a cow. Quickly but carefully the bull approaches, stopping now and then to listen attentively for the possible presence of a rival. He is in an excited condition and filled with the thought of finding the mate for whom he has been longing passionately. Again and again he raises the head high as he sniffs the air, but the still night carries no scent of cow or bull and so he comes on with ever-increasing care. Suddenly from out of the place of concealment, not twenty yards away perhaps, a tongue of red spits. Simultaneously with the rifle's roar a bullet strikes the love-sick bull and he falls to the earth, a victim to Nature's desires and the so-called sporting instinct of man. It is not a pretty picture and one need not be 'sloppy' or senti-

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mental to find fault with it. Supposing that instead of the sharp red spit of the rifle there had been the pale bluish white glare of a flashlight, and a shutter click, instead of the loud detonation of the cordite. Then on the plate a striking photograph of the deceived bull, who though frightened would have wondered and escaped to find later the lady friend for whom he had longed with such disastrous results. I have never seen a moose photographed under these conditions, but there is no reason why it should not be done with the modern flashlight outfits.

The mating season finished, and it lasts a month more or less, the autumn is now well advanced; and the deciduous trees have shed their many-coloured leaves, winter buds are forming on the bare grey branches; the embryo leaves are making frantic efforts to finish the preparations for the long period of cold weather when the land will be wrapped in its covering of snow. The summer birds have gone to warmer climes. Red squirrels are hoarding seeds for winter use. The whitetail deer have lost their reddish coats and their fawns no longer have spots, they are now grey and very inconspicuous. The bucks have been fighting and love-making and have now quieted down. In the forest the ruffed grouse and the spruce partridge are busy eating the remaining berries and fattening up against the period when food will be difficult to find. The northern hare is slowly turning white and

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the black bears, if there are any in the vicinity, having fed well, are thinking of retiring to their dens to sleep away the dreary months that are to come. Everywhere is the evidence of preparation and then the first snow falls, the lakes freeze over and the river banks are coated with glistening ice.

By the middle of December the bull moose begin to cast their great antlers and, forgetting their past fights and rivalries, are coming together ready to 'yard' when the snows become deep. This so-called 'yarding' is a habit formed for mutual protection. They form groups varying in number of individuals, and stay more or less in a restricted area in the dense forest where, by keeping on the move, they trample down the snow making a network of paths, and thus keep the place open so that they may exercise and feed in case of blizzards. During the winter they live largely on the bark of saplings and on twigs, for all ground food is buried beneath the deep snow. In order to reach the upper branches of saplings they ride them down between their front legs. This accounts for branches being found that are peeled even though ten feet or more from the ground.

In the days when game laws were less well observed than at present the 'yarding' of the moose proved disastrous, because men, especially those engaged in the lumber camps, took advantage of these concentrations, knowing well that in the event of a heavy fall of snow,



Bull Moose photographed in July.

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or a crust forming on what had already fallen, they could slaughter the wretched animals with the least possible effort, slaughter them even to the last one, then drag the meat away on sleds and keep the logging camp supplied. This played such havoc among the animals that at one time the moose was threatened with almost complete extermination. Then it became evident that if they were to be saved better laws must be made and, what was even more important, they must be observed. The result has been most gratifying, for to-day the moose is far more abundant than it was say thirty, forty or even seventy years ago.

In looking over old papers I notice that as far back as in 1857 an Englishman who was shooting in New Brunswick declared that if immediate action was not taken to prevent the slaughter of moose they would soon be exterminated. In those days 'crust' hunting (a thaw followed by sudden freezing coats the snow with ice, which is not strong enough to bear the animals' weight, consequently the feet break through and the wretched creature flounders about unable to get a proper foothold and is cut by the ice. Needless to say, he then falls an easy victim to the hunter), running with dogs and even snaring were allowed and practised, both by white men and Indians. Men have told me that they can well remember the time when seeing a moose was regarded as an event, and yet I have counted upwards of fifty in a single day's canoeing and walking

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in the same country, and this is the combined result of good game laws properly enforced (up to a point at any rate), public opinion, and, to a lesser degree, the practical disappearance of wolves. To have lost the moose would have been a misfortune, as, in fact, is the loss of any fine animal. The giant fallow deer or Irish elk has gone for ever, and we have now only the well-preserved antlers and skeletons; so also has the deer moose (*Cervalces*) of the Pleistocene period of North America (it probably bore a striking resemblance to the moose of to-day) disappeared. At one time the American bison, which existed in countless numbers, was nearly added to the list of extinct animals and was saved only by the passing of stringent laws. The last half-century has been a critical period for many species, but fortunately public opinion was awakened in time to save most of them. In South Africa the story has not been so satisfactory, and in other parts of that continent the question of conservation of big game is still exercising the minds of those who have the interests of the animals at heart and are possessed of a proper understanding of the responsibilities that rest with us as custodians or stewards of the world's natural possessions; but I am wandering again from the moose and its habits.

Winter is, of course, a period of hardship, the degree varying with the weather. Thaws followed by sudden freezes, unusually deep snow and 'glitters' (rain freezing

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on trees and ground), are the natural enemies not only of the moose but of all the wild creatures, and death comes to those that are not strong and sound. This is the period when nature does its pruning and casts aside the members that are unfit. Gradually, with the lengthening of the days, the snow passes from the land, enters the streams and lakes and makes its way to the sea. With its going, life comes to the country. The buds swell and burst, seeds long buried in the peaty earth of the forest send up their leaves and flowers to carpet the ground, and the cow moose in the secluded forest gives birth to her calf, one as a rule, but occasionally twins, though this happens less often than with the deer. The calf is a strange-looking little creature, composed chiefly of exaggerated legs, in fact it looks almost as though it were walking on stilts, a large head and conspicuous ears, sometimes a well-developed mane and in colour of a reddish grey rather than the colder tone of the parents. The mother, in common with other of the deer family, is devoted to her calf and will make a fearless attack on any possible enemy if danger threatens. When she is feeding, the youngster will usually hide in the grasses or bushes, getting up at frequent intervals to take nourishment from the mother. From the earliest days they swim with perfect ease, and when in the water little shows above the surface except the large head and shoulders. This is true also of the fully-grown animals.

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During the spring and early summer the cows do not usually associate with the bulls who, while growing their antlers, are solitary in habit, though many will come to a single pond for the purpose of feeding.

The first time I attempted to photograph moose was nearly thirty years ago, when, with the then newly designed graflex camera, I visited Maine. It was a wonderful trip, during which numerous opportunities occurred; two in particular remain in my memory. One was when, after a hard tramp up the slopes of Mount Katahdin, we came to a small but very beautiful lake. We launched the canoe which we had carried about eight or ten miles through the tangled forest and then proceeded to stalk a fine bull moose which was feeding among the lily pads not far from a timbered point. Not a ripple stirred the smooth surface of the water and everything was reflected as though in a mirror. A wonderful mass of snow-white clouds showed with startling distinctness against the deep-blue sky and made the picture complete. The great dark-coloured animal standing in the shallow water possessed a well-developed pair of horns, which looked even larger than they really were as they were still in the velvet. As we approached slowly and silently he regarded us with mild curiosity but seemingly without fear. It is unlikely that any canoe had ever before touched the waters of this lake, so we were something new and presumably we were not considered human beings. With

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infinite care we manœuvred into position so that the clouds would complete the composition, and my heart beat violently under the excitement, for I was about to get what promised to be the perfect picture of a moose, not merely a photograph, but a real picture. Carefully I focussed the camera and pressed the shutter release. In the absolute stillness the sound was disturbingly loud and it frightened the moose so badly that, with a frantic splash, he made for the nearest shore, stopped just before reaching it to have one last look at the strange creatures that travelled on the water and I had time to make yet another exposure. I had been repaid a hundredfold for the long walk, at least so I thought at the time, but disappointment was in store for me, a bitter disappointment for which I could not altogether blame myself, yet from the experience I at least learned a lesson.

The graflex camera, which I have already mentioned, was a new development of the reflex type. The makers had promised to have one ready for me several weeks before I was to start on this trip, so that I might have ample opportunity to test it thoroughly. Day by day delivery was delayed and I became more and more anxious because my guide was engaged for a definite date and would expect payment from that time. At last the day arrived when I must leave New York and the camera was only handed to me on the train with the assurance that it had been tested by an expert and

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found to work perfectly. It happened, however, that it had been tried out in an ordinary room and had not been subjected to sunlight. I made a large number of exposures without having a chance to develop the plates, so great had been my faith in the manufacturers' word. On returning home several weeks later I took my plates into the dark-room and there discovered the unfortunate fact that light had leaked into the camera and nearly every plate was fogged to a greater or lesser extent, and as ill luck would have it the 'beautiful' picture of the moose was nothing but a mass of fog. It was very discouraging, for not only had I spent a lot of money on the trip but I had done a great deal of very hard work and nearly all the pictures were useless. It taught me that it is never safe to use any camera that I have not proved personally to be in perfect condition.

Among the many interesting subjects that I had photographed was one of a pair of particularly fine bull moose in a large shallow pond. We had stalked them for hours, as they were suspicious, and finally had come within sufficiently close range. One of the animals at the moment when the exposure was made was standing in a perfect position, with head held high, while the other had just started to run and was splashing the water in a most effective way. It was a splendid sight and would, of course, have made a fine picture, but this also was fogged so badly that I could scarcely use



Young Bull Moose. The Horns are only partly grown and are still in Velvet.

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it. Other subjects of interest were moose at close quarters feeding on the leaves of maple trees growing on the edge of the water, but none turned out well, and I felt the failure very keenly, as I had built up hopes of having a finely illustrated article for *Country Life in America*.

A few years later I went to New Brunswick with two other camera enthusiasts to try our hand at making cinema pictures of moose. This was in 1906, when motion-picture cameras were very primitive and uncertain. The country we visited was in the Miramichi district where we found moose in unexpected abundance, twenty, thirty or even fifty were seen in a single day, but seeing and photographing them were altogether different propositions; so also was a bulky 'movie' camera with its cumbersome tripod different from the compact reflex camera which required no tripod. It was the difference between fifteen pounds and about seventy. Consequently, stalking with the heavier outfit was anything but easy and very much more difficult than the beautifully built automatic cameras of to-day.

We found that our best results were obtained when working from a canoe, and though we had several narrow escapes from capsizing, we managed to secure some quite good film, showing not only the animals swimming but also others feeding along the shores of the various lakes and rivers. These were, I believe,

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the first moving pictures made of moose. As I was to do an article on the trip I required illustrations, so that it was necessary to make a number of 'stills'. Some taken of the moose swimming were made at such close quarters that they even showed the flies on the animals' heads.

One day when I was out alone, creeping silently through the woods, I caught sight of a bull moose feeding on the edge of a pond. Owing to the direction of the wind I was forced to make a wide detour through a tangled swamp, which harboured the finest variety of biting flies. The day was sultry, so they were particularly busy and I endured a most unpleasant half-hour, but eventually found myself within less than a hundred yards of the still unsuspecting animal; between us there was practically no cover, nothing but a stretch of mossy marsh with here and there a dwarf spruce, almost bare of leaves and consequently of little use as a screen. My only chance was to move when the moose had his head down and was interested in feeding. The moment his head was raised, as it was at frequent intervals, according to the habit of all wild animals when grazing, I had to remain absolutely immovable. It happened after I had decorated myself with grass and leaves by way of camouflage that, as I was taking a step forward, the animal looked up and in my direction. I was balanced on one foot and dared not even bring the other one down. Like a



A fine Bull Moose feeding near the Edge of a Lake.

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stork I stood thus, trying to keep my balance with the camera held in readiness. At this moment, of course, a very large and very hungry moose fly perched on my nose and began immediately to make a meal. I felt the sharp sting as he punctured my unfortunate feature, but could do nothing in self-defence, to move would have been fatal to my chances of photographing the now suspicious moose. How I wished my nose were of the movable variety or that the moose would take an interest in something besides me; but no, I needed investigating, he thought, and for what seemed an interminable time he continued to stare rudely and inquiringly at me. My leg ached, my arms ached and my nose was enduring the most unpleasant sensation of being eaten, blood streamed down and yet I could do nothing but stand still in imitation of a new kind of tree trunk. Just as I was about to give up the contest of patience the moose, satisfied apparently that I was harmless, resumed feeding, and I dropped my aching foot and at the same time dealt out sudden death to the blood-satiated fly.

Walking toward the animal had proved somewhat trying, so I decided to continue the stalking in a less dignified position; in other words, I placed my tummy in comparatively close contact with the spongy and very wet moss and squirmed my way towards my quarry, moving, of course, only when he was busy feeding.

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Finally, after infinite patience and getting thoroughly soaked, I got to within about twenty yards, close enough and as near as I dared to go. After carefully examining my camera to see that it really was ready, that the slide had been drawn from the plate holder (something that one fails frequently to do), and that the shutter was set, I rose slowly, focussed accurately and waited. The moose unfortunately insisted on keeping his back toward me and his head down, not an ideal position, but I thought it best to make an exposure, as he might suddenly start off at any moment. Click went the shutter and instantly I dropped flat on the moss and held my breath, wondering if I had been discovered or if there would be a chance for another picture. With a cinema camera I could have kept on photographing and got all sorts of positions, that is one way in which it is easier and more satisfactory than the 'still' camera, which compels you to use your judgment as to when to make the exposure.

Of course the moose had heard the shutter and had raised his head, but seeing nothing suspicious, for I was flat on the ground, he again began feeding. Quietly I changed the plate and again stood up. This time I was determined to have a picture with the head raised, so I made a slight noise. Instantly the great beast looked up, but unfortunately not at me, nor did he turn his body, so I still had the tail or should I say tailless view (moose have practically no tail). I dared not risk



Instantly the great beast looked up.

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waiting, so pressed the release of the shutter. The next moment he swung round, giving a splendid three-quarter front view with head held high, but only for a brief second did he stand in this perfect position. Before I could change the plate he was off with frantic speed, splashing across the shallow pond to disappear into the forest. I had not got exactly what I wanted, one never does, but I had at least secured two interesting pictures, the best I have ever made of these animals, and under perfect light conditions and of a really fine animal, so I was more or less contented and returned to camp with the joyful feeling of having outwitted such an alert animal as a moose.

We had all come fully prepared to do some flash-light hunting, so that night we arranged our cameras and flash in a canoe and as soon as darkness came started out to try our luck. We had not proceeded far before we heard the splash, splash of a moose feeding some distance away, so the canoe was paddled in absolute silence through the smooth dark water. A small head-light was mounted on the bow of the canoe, but for some time it revealed nothing but the glitter of the flat floating lily leaves.

There is something very fascinating in this night work with canoe and camera; the utter stillness, the mysterious gloom of night and the uncertainty of what will be found, perhaps a whitetail deer, perhaps a fine bull moose or an ungainly and unbeautiful cow, possibly

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a fox coming down to the shallow water to search for claims, or a racoon or even a bear, or again it may be a heron hunting for frogs, or small fish, one never knows, but all is game for the flashlight hunter. We were looking for moose and soon the jack light shone on a large wet form standing in a foot or so of water. The head was raised and the light showed the fine head of an old bull. Luck seemed to be with us and the canoe was moved forward slowly and without noise and still the moose gazed directly at us, or rather at the light, for behind that he could see nothing.

I looked into the focussing hood, but strangely enough could not distinguish anything but a blur where the animal was. In vain did I move the lens back and forth, I simply could not get the focus. *We were within about fifteen yards, so, as there was no time to lose, I made a guess at the focus and fired the flash.* With the loud report and the blinding light the wretched animal was frightened half to death and floundered about first one way and then another, but finally vanished into the night.

Unfortunately the weather showed signs of making trouble, the stars were no longer visible and black clouds covered the sky, soon large drops of rain began to patter on the quiet lake. Our night's work was done and we made all possible haste back to camp. Before going to bed I decided to develop the exposed plates (as I had used two cameras simultaneously, one



Cow Moose, walking by a lake.

THE MOOSE OF EASTERN NORTH AMERICA

of them being of fixed focus). The result was thoroughly unsatisfactory. The animal showed, but was dull and more or less blurred, and I could not account for the strange effect. Anyhow, it was utterly disappointing. The next night we went out again and before searching for any animals I tested the cameras, and again there was the same blur, so I examined them by the light of an electric torch and found that the lens was covered with condensation. Here, then, was the cause of the trouble, unexpected of course, but nevertheless quite understandable and easy enough to guard against, now that it had been discovered. The sad part was that it had cost us a picture, or rather two, of a very fine bull moose. We continued on our way, happy at least to know the cause of the failure and full of hope, as one always is, but the night produced only one cow moose, of which I got a fairly satisfactory flashlight.

For several nights after that the weather behaved badly and our time was getting short, so on the first evening that was fine enough we decided to use two canoes, both being fitted with a complete outfit. Each of us took a side of the lake and proceeded cautiously on our way. My side produced nothing, but on the other I heard the welcome sound of a large animal walking slowly in the water and I wondered what luck my friends would have, and envied them.

We remained stationary and watched the slowly

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moving head-light and soon saw that it was shining on a large moose, whether bull or cow we could not be sure, as the distance was too great. Suddenly the brilliant flash of the magnesium powder lighted up the scene, and the next moment there was a terrific amount of splashing, coupled with shouts and various other noises. Then the sound of an animal going fast through the water, but no sign of a light; voices, talking and laughing and still more splashing showed that something unexpected had happened, and we hastened over to find the men in the water trying to right their canoe. What had happened was then described: the moose was so badly frightened by the flash and its sharp report that, not knowing which way to go, he had rushed directly toward the canoe and, finding the men, had become still more confused and had tried to jump over the frail craft, which was an obstacle in his path, but in this attempt he had struck the gunwale and, naturally enough, had capsized it. Men and camera had been thrown into the water, while the frightened moose, scarcely knowing what he had encountered, had made good his escape and was probably making tracks toward the other end of the Province. We helped to rescue the bedraggled men and the photographic outfit, which, needless to say, was not improved by the wetting, while the exposed plates were ruined. It had been an amusing, even though disastrous, experience, but as no one was hurt we could afford to laugh over it. Flash-

THE MOOSE OF EASTERN NORTH AMERICA

light photography was evidently full of surprises, some of which were not as pleasant as one might wish. This was my last attempt at moose photography in the eastern part of North America. My next was in the Canadian Rockies, and is described in the chapter dealing with that wonderful country.

Chapter IV

Caribou

THE PASSING OF THE CARIBOU OF NEWFOUNDLAND

An Animal that is threatened with extinction

IT has always struck me as strange that our lives are so frequently influenced by small and apparently trivial circumstances. The wheel which regulates what we do seems to be turned by an invisible hand and steers us along paths undreamed of and unexpected. We do not appear to be free agents but go our ways, impelled by that governing power which directs us to do this or that as surely as a tide carries a drifting boat.

Many years ago, at the beginning of the present century, Fate ordained that I should be commissioned by the Magazine *Country Life in America*, to go to Newfoundland to do an article on Salmon Fishing and secure, if possible, a suitable series of photographs of these wonderful game fish. Being a keen fisherman I was filled with enthusiasm at the task before me, little realizing to what it would lead. In the course of my wanderings through the windswept island, so bleak yet so fascinating to anyone who loves the wilds, I chanced



Salmon, jumping

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to see some caribou, and was struck immediately by their extraordinary appearance. Till then I had but seen mounted specimens in museums and staring glass-eyed heads hung on walls, mute and even pathetic evidence of man's power to kill. I had given little thought to what the animals might be like in the flesh.

On seeing them moving about over the richly coloured barrens to which they belonged, I began to realize their beauty, and in me was born an overwhelming desire to learn something of their lives and secure a good set of photographs showing them in all the glory of their natural habitat. Careful inquiries brought the information that the best time, in fact the only satisfactory time for my purpose, would be during the autumn migration, which usually took place immediately following the first fall of snow. Filled with enthusiasm I made the suggestion to the Editor, as soon as I returned to New York, that an illustrated article on the animals would prove interesting. Fortunately my salmon photographs had been successful, so my proposal met with a warm response, and I was told to make whatever arrangements were necessary for carrying out the task at the proper time.

This, then, was the way in which I began my interest in the caribou, an interest which increased with the passing of the years and the gradually collected information on the habits and lives of these little understood animals. For ten years I continued to visit the

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island in search of material, and sometimes I wondered whether I was not foolish to spend so much money, time and energy, on what had become almost an obsession with me. During this period the unseen hand steered me, and I was scarcely conscious of the impelling force. Only recently have I realized that Fate had ordained apparently that my work should be completed in the form of the book *The Romance of the Newfoundland Caribou*, which was published in 1913. In the foreword of this work I wrote the following: "Few animals are more easily seen when conditions are normal, and it is safe to predict that these creatures will continue to be abundant for very many years to come, *unless some unforeseen condition arises.*" And again, in speaking of the value of photographic records: "Should the day come, as it possibly may, when the Newfoundland caribou ceases to exist in its wild and natural condition, there will at least be the pictures to show to those who will then be living." Still again, almost as a prophecy, (in dealing with the importance of preserving in permanent form the photograph records of wild animals,) that outside of the American Museum of Natural History, "the pictures have never secured any permanent home, even though they represent animals many of which will become scarce within a few years and extinct sooner than any of us realize." "In these days of speed and still more speed things happen quickly. More changes take place in ten years now than in ten

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or twenty times ten years a few centuries ago. Animals which changed but little during great periods covering thousands of years are suddenly wiped out before our very eyes. There is no time to waste." How little did I realize when I wrote these words that the vast herds, seemingly unlimited and enduring, would practically vanish during my own lifetime; that ten short years from the day when I had enjoyed watching the long lines of these silvery white and grey animals moving across the open barrens or swimming the cold rivers on their way to southern feeding grounds, I should be told that to all intents and purposes they had vanished; vanished with an astonishing abruptness, unbelievable and incomprehensible. No more are the great migrations to be seen, perhaps they have gone for ever, who can say?

I am told that there are not two hundred caribou in the whole island to-day, and those are scattered in ones and twos in the wild uninhabited regions. My fears, laughed at when I expressed them, have been only too sadly realized, and the cause? I do not know. Some people explain it as a result of the world war when the game rangers were overseas, engaged in the grim conflict so much more vital than the guarding of their animal charges, with the result that game laws were disregarded, for the people required meat. Be that as it may, I cannot believe that this is the real explanation. Far more likely is it that disease caused

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the wholesale destruction. In 1914 there were probably two or three hundred thousand caribou in Newfoundland. This is, of course, merely a guess, but it is the range of figures that was given by careful observers. The exact number which existed sixteen years ago is not of great importance. Animals which had to fight for existence against the elements and conditions as stern and relentless as those found in Newfoundland can only with difficulty maintain their numbers. Once they begin to lose ground numerically their end is in sight, and little short of a miracle can save them.

Of one thing I am glad, and that is that before it was too late, when the animals were at their best, I was prompted to do all within my humble power to write their life history and perpetuate in photographic form the appearance of the handsome creatures. In spite of the fact that my work entailed almost untold hardships and involved the overcoming of endless difficulties, I look back at those wonderful months when, all alone, I lived each autumn in the land of the caribou, studying them in the various phases of their interesting life and slowly collected the photographs which to-day are almost the only records of these magnificent creatures.

For the benefit of those who may read these pages and whose knowledge of caribou is slight, a few words of description may not come amiss. Briefly they are



A fine specimen of young Caribou Stag.

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the western form of reindeer and have developed certain peculiarities, both in appearance and habits, during the long years that have elapsed since there existed only the one species. Geographical changes in the northern part of the world led to a complete separation of the original herds. Those in the east became known as reindeer, and were brought into contact with human beings and employed as beasts of burden and for supplying milk in the countries where cows did not exist. Their range was from the north as far south as Spain, though probably never found in Ireland. The western herds were scattered over the North American continent, and have become known to us as caribou. Their chief difference is that they have never become domesticated in any way. Man has hunted them in the past for food and skins, but has never been able to employ them for his own use. Strangely enough they will not endure captivity. Frequent efforts have been made to keep them in zoological gardens, but, so far, all attempts of which I have heard have ended disastrously. They live perhaps a year, or even two, and then die, no matter how much care they receive. Why there should be this decided difference between the eastern and western species is difficult to understand.

The caribou have become subdivided, and now include several more or less distinct species of which the Osborne caribou, found in the western part of

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Canada (the central point of their range being about 130° longitude and 60° North latitude), are the largest and carry the longest though not the most massive 'heads', while those in Newfoundland are in some ways the most handsome and have the finest horns, with most conspicuous brow antlers, the development of which reaches its height when the animal is in its prime.

I have been surprised to find how many people are ignorant of the fact that caribou, like all the deer, shed their antlers every year, but this subject will be dealt with later on. While the stags carry antlers of immense size and beauty of design with points numbering up to and occasionally more than fifty, a fair proportion of the does also grow small imitations of the stags' antlers, though for what purpose I have never been able to discover. They start their growth late in the spring and are usually carried throughout the winter. As a means of protection they have little value, and as an adornment they are scarcely a success. Still, presumably, they must serve some purpose which has not yet been explained, I believe. Possibly in times gone by they were of use, and now that those conditions no longer exist they are gradually deteriorating and will eventually disappear altogether. This theory would perhaps account for the fact that they are grown only by some of the does. In size the caribou stag is approximately forty-six to fifty inches in height and

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seventy-eight to eighty-four inches in length, the weight being somewhere between three hundred and five hundred pounds, while the doe is somewhat smaller, but there is a great variation both in the size, colour and general appearance of both. The colour changes with the seasons, white prevailing to a greater or lesser extent during the winter, a warm slate or mouse colour during the summer, and a very irregular range from white to warm dark grey is to be found during the autumn, the stags usually having creamy white neck and belly, but the range of colour is so great that it is difficult to say what is really typical, especially during the months of September, October and November.

I found during my many visits to Newfoundland that the most interesting time for studying the caribou was during the mating or rutting season, for then the animals are in their prime; they are more active and alert and conditions generally are most favourable, so that a richer fund of information may be obtained with less effort than at any other period. To give the results of my experiences, particularly of the day when my persistence was rewarded by what I had so long hoped for, the photographing of two stags fighting, all of which go back to the years between 1902 and 1912, I feel that I can do no better than quote freely from my book, *The Romance of the Newfoundland Caribou* (which, I regret to say, is out of print), in which is related all that I learned during those happy

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but hard-working years. We will start with the love-making and the statement that the stag believes in a plurality of wives—a great plurality; in fact, as many as he can or thinks he can keep under his control. Some writers contend that the caribou stag is true to his own band of does. How they arrive at such a conclusion I cannot see. It may possibly apply to some of the species (one writer states that in the region near Abitibi the stags do not have more than two does), but certainly not to the caribou of Newfoundland. I have seen several cases of stags leaving all their does and taking possession of an entirely new herd.

By way of an example, let me tell of one occasion when I was watching a very fair stag that had eight does, some of which had their fawns with them. For several hours they were within a few hundred yards of where I lay concealed, hoping all the time that they would come within photographic range. The stag was in a very excited condition, perpetually grunting and never quiet for a moment, except when watching a doe that appeared to be thinking of taking her departure. Immediately she moved away, he would rush after her and force her back to the herd. Suddenly the stag looked up and snorted loudly. Across the barren, over a quarter of a mile away, was another stag of about his own size with nine does. For some time both stags continued to stare at one another. The further does did not stop, however, but continued to



Caribou Fawn separated from its Mother. They take to the Water like Ducks.

come slowly across the barren. Before long both stags started forward at a fast trot, the new-comer soon overtaking his herd. On they came, and I felt sure there was going to be a fight, as both stags appeared to be very irritable. Sometimes they would hold their heads high so that the sun glistened on their antlers. Sometimes their heads would be held down close to the ground, their heavy necks almost dragging on the moss. Nearer and nearer they came, both grunting and both seemingly full of fight, the does in the meanwhile evincing but the scantiest interest. At last the stags were within a few feet of one another. They stopped a moment regarding each other intently, and then, strange as it may sound, they passed on in the direction they had been going, and each took possession of the other one's herd of does. How to explain this curious behaviour I do not know. It was all so deliberate and done in such a matter-of-fact way, as though it were the ordinary course of procedure. Apparently all concerned were perfectly satisfied with the change, and yet it did not seem either right or in accordance with the general custom of animals. Had the stags not been evenly matched, and the number of does in the two herds entirely different, one could readily understand the more powerful stag taking possession of the larger herd. For in the animal world, just as among our own kind, might is right.

It must not be imagined for a moment that a single

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stag has undisputed and sole right to a herd of does. In most cases that came before my notice a small herd of from five or six up to about fifteen would be in the charge of at least two stags, usually animals of different ages, the older ones being without doubt the controlling power. In larger herds I have frequently seen fully half a dozen mature stags, to say nothing of a number of yearlings and two-year-olds, whose antics were very amusing to watch. Their indiscretion frequently got them into serious trouble when they attempted to make love to a youthful doe and lure her away from the herd.

A memorable day in the middle of October I had by far my most exciting and interesting day with the caribou. An account of it will, I trust, give some idea not only of the animals' habits, but of the keen sport which hunting with a camera affords, and show in what way it is superior to the rifle in giving opportunity for animal study. The day was bitterly cold, the wind blowing hard from the northern, snow-covered hills numbed one's hands, so that without gloves manipulating the camera was decidedly difficult, while the alternative of using clumsy gloves placed one equally at a disadvantage. The water-soaked ground was covered with a hard crust of frozen moss, which crackled loudly as one walked over it, and made stalking extremely difficult.

About half-past eight I entered a small barren,

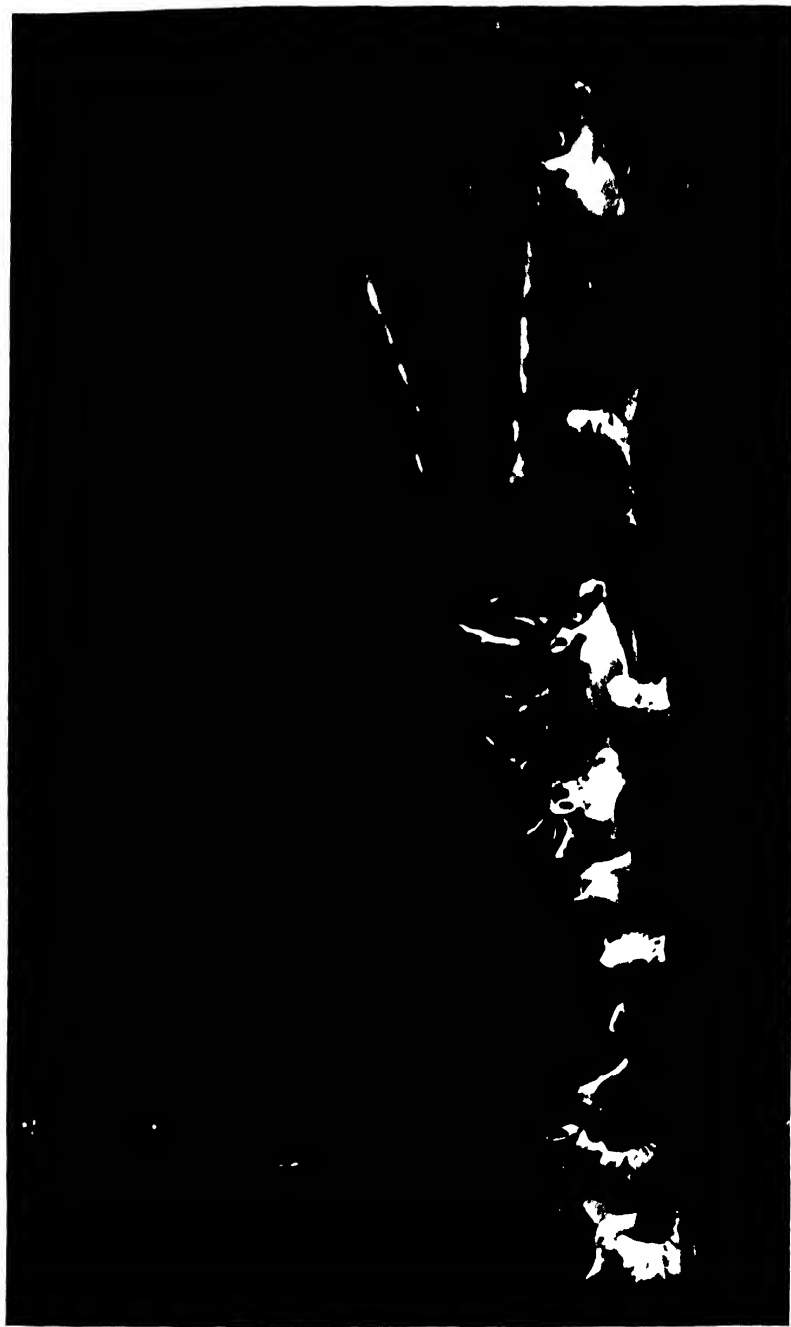
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and while examining the surrounding growth of scrubby firs, saw with delight a caribou doe coming through the trees along one of the northern leads. Soon she was followed by another and still another until no less than forty-two were in sight. Among them were two quite good stags and a number of smaller ones. There was also one unusually large and very white fawnless doe. In fact she was the first to come into the open barren and was evidently the leader of the herd. At the time I was not particularly interested in her, except for her unusual whiteness, as it was rather early in the season for this full winter covering, but soon my interest developed, as I discovered that she was uncommonly alert and keen-eyed, for even though I squatted behind a dwarf spruce tree, she detected my presence while still about three hundred yards away, and having done so, she positively refused to let me out of her sight. Try as I might she would keep her eyes upon me, blowing occasionally to let her companions know that danger lurked ahead. Every time any of the herd ventured to come in my direction she gave the sound of alarm and drew them back. For nearly an hour this continued.

The stags in the meantime were watching one another and the does, and each time a doe strayed she was promptly brought back, often at the point of the horn if she did not move quickly enough to satisfy her exacting master. There were splendid

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opportunities for pictures if only I could get closer, but apparently that was impossible. The big white doe thoroughly objected to my presence, and under no consideration was she going to allow me to approach. At last she stopped staring at me, and I thought I might make a dash for a nearer clump of bushes, but just as I began to move she looked up; evidently what she saw made her consider her suspicions fully justified, for she promptly gave a loud snort and started off to the eastward, and the entire herd followed at full swing, not even waiting a moment to inquire the reason for this sudden departure. From the direction they were going there was every reason to believe that their destination was a barren I knew of, about a mile and a half away. As the wind made it impossible to follow them without great danger of their getting my scent I returned to the canoe, which I found to be surrounded by thin ice, which though apparently so fragile is treacherous to those who do not understand, for even though it be but a fraction of an inch in thickness, it will quickly cut through the canvas or wood sheathing of a boat. Carefully cutting my way through, I proceeded up the river to a place where I could enter the barren, in which I expected to find the herd, from the leeward side. On arriving I found my surmise to be correct. Not only was there the herd of forty-two that I had previously seen, but another and still larger herd was joining them, and to my delight it contained



The Caribou always swim with much of the Body showing above Water, and the white tail held erect.

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one really magnificent stag, and several more than ordinarily good ones.

For some time I stood on the hill overlooking the swampy barren watching the animals and wondering how I could possibly get within photographic range of the big stag, for of course the larger the herd the greater is the difficulty of stalking it. If shooting had been my object what an opportunity this was, for they were scarcely two hundred yards away, an easy shot for the rifle, but an impossible one for the camera. While trying to arrange some plan which would offer even a slight chance of success, I was disgusted to see my old white friend start back in the direction from which she had come, and, of course, the combined herd followed without the slightest hesitation. Evidently I must do likewise. So slinging the camera over my back I went after them, not directly on their trail, for that would have taken me through an almost impassable swamp, but parallel along some fairly open hills. To my annoyance I discovered that a river lay directly in my way. As it was too deep, too rough, and, I may add, too cold to wade I had to search for a better way across. A fallen tree offered the chance, and in fear and trembling I crossed the slender bridge in safety, camera and all. This delay, which at the time I considered unfortunate, gave the animals a chance to get far ahead; perhaps even they had already crossed the barren, in which case the hunt would be

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at an end as the whole country was so thoroughly cut up with tracks, there would be no way of telling which way they had gone. Fortunately the long years which I have spent alone in the woods, studying animals, have taught me to go as noiselessly as possible, never stepping on a dry twig if it could be avoided, and never letting branches strike my clothing. This habit of years proved a friend to-day; I had no idea that the animals were within half a mile or more of me and was therefore going along at a pretty good speed, when suddenly I caught sight of the white flank of a caribou not more than twenty feet away. It was a lucky escape, for had I gone a few steps further, she must certainly have got my wind and given the alarm. I quickly walked back a little distance to be sure that I had not passed any others, but the one already seen was evidently the last of the herd, all the others being scattered through the woods ahead. It is needless to say that the utmost caution was necessary if I would avoid any chance of arousing their suspicions. Each step forward had to be most carefully considered, and every bush scrutinized to see whether or not it concealed a caribou. Progress was, under these conditions, painfully slow and tedious, and continued so while covering the half a mile to the barren where I hoped to have the opportunity of securing a photograph of the big stag. On we went, the hunter and the unsuspecting hunted, sometimes within a few feet of each other, for



Herd of migrating Caribou, having been frightened, make a hurried landing.

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the does were wandering in a rather aimless way, feeding as they went, and frequently going back on their tracks. There were young stags, does and fawns in plenty, but no sign of the big fellows. The woods were so dense that no animal could be distinguished at a distance of more than about thirty yards. Later on, much to my delight, a many-pointed antler caught my eye, and though it disappeared almost immediately, it left me happy in the knowledge that without doubt there was one big stag near by. Several times my white friend came in sight to my great consternation and joy; for it is always a source of satisfaction to outwit any animal, especially one that has proved itself unusually clever. After what seemed an interminable time the barren could be seen ahead. I would have greatly liked to go forward and watch the herd as they emerged from the woods, but the wind prevented any such plan being carried into effect. To stay down wind of every caribou in the head was imperative if one could hope for any chance of success. At last the entire herd were in clear view straggling over the barren, and among them the large stags showed with delightful clearness. I could see that besides the very large ones there were five that carried heads of from twenty-five to thirty-five or more points, one of these having extraordinarily long, spindly horns, and a number of small stags with about twenty-point heads—over a hundred animals of all sizes and shades from

almost white to dark grey. Altogether it was a very wonderful sight, and one which filled me with hope. Seeing them and photographing them were, unfortunately, very different, and I could see no possible way of attaining my object, unless by good luck the herd should return toward me; a very improbable occurrence.

The barren was perhaps four or five hundred yards across and nearly half a mile long. It was extremely wet and boggy in some parts, and there was very little cover of any sort to help in stalking. At the upper or windward side was a scattered growth of much-stunted spruce trees which at first did not particularly interest me, but in which I was destined to spend many delightful and exciting hours. The herd was dispersed over the greater part of the entire barren, so that stalking the stags, especially the larger ones, was impossible, as they appeared determined to keep pretty near the centre surrounded by the does. As there appeared to be a tendency to work to the windward, I ventured out of the woods and crawled (and that is the only word which expressed my action) out of the barren, seeking the shelter of whatever I could find. Near the largest stag stood my friend the white doe most keenly and aggravatingly alert. Evidently she was going to protect him from me and my camera at all cost, so I made my way very slowly toward another stag of smaller size that was standing head down in a most dejected attitude, gazing at a small bush.

CARIBOU

Not far from him was another of about the same size that seemed to resent the attitude of the bush-admiring stag, and after watching him intently for some moments decided to break in upon his reflections. He charged him from the rear with a suddenness that was truly surprising, but scarcely as surprising as the suddenness with which the object of the attack came to his senses and wheeled round ready to receive the unprovoked onslaught. With lowered heads they met, horn striking horn, the crashing sound echoing through the surrounding woods. Then, together they stood, each striving to force the other back, but neither moved for they were evenly matched. After a few moments they drew apart and the bush-staring stag resumed his apparently foolish attitude. This provoked the other to a second attack with exactly the same result. Half a dozen times this was repeated without any advantage being gained by either one. Throughout these encounters there was always a smaller cluster of dwarf trees which effectually prevented my taking any photographs of the scene, for I dared not make even the slightest move because the white doe was suspiciously watching in my direction. How I disliked that doe! Yet I could not help admiring the persistent manner in which she did her sentry work. Any herd with a doe like that could feed, sleep and travel in peace, satisfied in the knowledge that they were being carefully guarded against the possible approach of enemies.

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Before the day had passed, however, I had the pleasure of outwitting her, and I don't know of anything in the way of animal stalking that ever gave me greater satisfaction. Eventually the two stags lost all idea of fighting, and, contrary to all that I have ever heard, quietly began feeding. Every account that has come to my knowledge either by reading or hearsay agrees, without qualification, that during the rutting season the stags entirely refrain from eating, the only form of nourishment they are supposed to take being muddy water or even soft mud. What gave rise to this idea I cannot understand, because nearly half of the stags (I speak only of the mature ones, for the youngsters feed just as the does do) I watched for any length of time did eat to a greater or lesser extent; but in no case did they eat as persistently as did the does and fawns. During this season, while the rut is in full swing, the large stags do not appear to sleep nearly as frequently as the rest of the herd or at least they don't lie down so much. As the two stags fed at frequent intervals, they, together with the rest of the herd, worked their way gradually toward the scrubby growth on the windward side of the barren. Slowly I followed, keeping my eyes on every one, especially the big white doe, to see that none went down wind, for the does have an exasperating habit of going away from the herd and suddenly appearing in some unexpected place where they catch the scent of the hunter.



A very old Newfoundland Caribou Stag.

CARIBOU

On and on we went, the nearest ones being sometimes within forty yards or less of me, till the herd distributed itself among the stunted trees. Carefully creeping over the last bit of open ground I, too, found myself in cover. Once there I felt more comfortable, for I could then stand erect and get the stiffness out of my joints.

By moving very cautiously I soon got into the midst of the herd. They were everywhere to windward, stags and does and beautiful soft-eyed fawns. Of course, in the nature of things, the biggest stag was among those furthest away; but there were several good-sized ones quite close, within ten or twenty yards, and about twelve yards away was the big light-coloured stag with the long horns which has already been mentioned. I had a splendid chance to examine him as he stood with lowered head gazing intently at the base of a small tree. What this particular habit means nobody knows. For hours at a time a stag will stand in this curious position almost without moving, sometimes with the head nearly touching the ground. This is done, I believe, only during the rutting season, and then as a rule only among the mature stags, particularly those that are fairly old. This stag was undoubtedly a veteran, if one might judge by the extreme length of the horns and the absence of points. In colour these horns were rather a light warm tone of yellow, almost a dull saffron, quite different from the rich reddish

yellow which is usually seen on the horns of the seven- or eight-year-old stag. This one had the curious Roman nose so frequently observed in the Newfoundland stags when very old. It is the ugliest type and is claimed by some people to be the characteristic of a different species. But this scarcely seems plausible, as every grade of the Roman nose development may be found. The extreme light colour of this old stag was very marked. He was not white, but a light yellowish grey; the neck, usually so very white, being of a rather dirty colour. For nearly two hours I watched this creature, and during that time he scarcely ever moved and never once raised his head, even in reply to the challenging snorts of some of the other stags.

A few yards away, perhaps seven paces, the brilliant yellow horns of a fine young stag showed above the low scrub, the head and body were hidden from my view by a thick bush, but the horns could be clearly seen; it was a thoroughly aggravating sight, as by no possibility could I see any chance of securing a photograph, even though he was so unusually close. All around me, except to leeward, were does and fawns and young stags. One doe slept peacefully within five yards of where I stood. She was lying down in the richly coloured moss, and as her eyes closed the handsome head would gradually drop lower and lower until it struck the ground, when she usually woke

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with a start, opened her eyes for a moment and then resumed her quiet, yet alert, sleep.

It is difficult to give any idea of the pleasure that may be derived from watching wild animals at such close quarters. There is a delightful and exciting suspense which cannot be described. No sport equals it, and as it is the camera which leads one into such intimate relations with the wild beasts, I claim that it far exceeds the rifle as a sporting instrument, while as a means of studying the habits of animals and birds it is absolutely without a rival.

In the thicker woods fifty to a hundred yards away the big stags were assembled. Their frequent bugling showed clearly that they were in a somewhat excited and nervous condition, so I continued to hope that I might see a fight before the day passed, for surely with so many there must be some ready and anxious to do battle on slight provocation. It was decidedly amusing to watch the young ones. They seemed to feel themselves so important as they strutted about going from one doe to another, scarcely heeding the almost inevitable rebuffs or the absolute disdain with which the fair ones met their advances. Once in a while a foolish doe would look with favour on one of these youngsters and off they would go side by side, the stag uttering repeated grunts of satisfaction as he coaxed the doe further and further away from the herd. Their attempts were in most cases discovered before they

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had gone more than a few yards, and then a larger stag would instantly make for the young buck and, after driving him away at the point of the horn, would chase the erring doe back to the herd where she belonged. Sometimes the young pair would refuse to be separated, and then followed a long chase which usually resulted in victory for the smaller and lighter stag as he could run faster. In no instance did the stags of very uneven age fight, for the young fellows evidently believed discretion to be by far the better part of valour.

The length of horn plays a very important part in fighting, more so even than the weight of the animal, as the encounter is, or should be, head on. It stands to reason, therefore, that the long horn can easily pass the guard of one with the shorter horns. Knowing this the youngsters steer clear of a fight which must necessarily be one-sided. Well-developed bays and brow antlers are of the greatest advantage as they offer very effectual protection to the head and neck of their possessor. In rare instances the horns become so firmly entangled that they cannot be disengaged. The result is, of course, inevitable death to both animals, unless by good luck it happens late in the season, when the horns may fall before the animals succumb. A few pairs of locked horns have been picked up, but in every case I know of they were still attached to the heads. In all probability it frequently happens



Heralds of the Cold Weather : Canada Geese coming from their Northern Feeding-grounds

CARIBOU

that horns are knocked off during a fight. Whether or not this ends the fight I do not know, as I have never seen it occur and do not know of anyone who has, but it is a common thing to see even large stags during the rutting season carrying only a single horn, the burr being badly inflamed as though the horn had been wrenched off by force before it was ready to drop.

One might be tempted to ask why the animals fight. But the question cannot be answered, because no person knows for certain. Apparently it is the desire to acquire the does, utterly regardless of the number already possessed. Perhaps it is simply that the animal is in a passionate condition and so highly irritable that the sight of a possible rival in a similar frame of mind and body inspires a desire to fight. Possibly it is only an exuberance of spirits or animal strength seeking outlet, but whatever may be the immediate cause, it is in all probability as already stated Nature's method of selecting the most powerful animals to be the progenitors of the species; just as man improves a breed of domestic animals by careful selection of the sires, so Nature demands among some species that certain qualifications shall be necessary in order that the race shall be strong and vigorous enough to hold its own in the great battle of life which offers no place to the weaklings. They die off usually by natural causes, being unable to withstand the hardships which are encountered by all wild animals, or in some

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cases they are killed by the more powerful members of their own species; and so the weakling almost invariably falls an easy and usually an early victim.

Nature, apparently regarding this question of perfection of strength to be of such great importance, has provided for the condition more with the deer family than with any other of the large mammals, I believe. In fact, it seems as though the greater part of the stag's life were arranged with this one idea in view. During about five months, or nearly half of the year, the horns are being grown. The caribou stag usually begins to show indications of new horn in May or early June, and from then until September the horns are growing; such immense growth of bone means that a large proportion of the nourishment taken by the animal is devoted to this purpose. *The growth is complete in September, then comes the hardening process* during which the velvet or soft protecting coat, designed to keep the horn at the right degree of moisture, dries, and has to be peeled off. During all these months the animal has had absolutely no use for its horns. They have, on the contrary, been an impediment to his freedom of action, always tender and demanding care lest they be injured. The velvet is removed chiefly by rubbing the horns against the rough bark of a tree; trees are often seen which have their bark scraped off for several feet by the vigorous action of the antlers. As some parts cannot be reached by this simple method,

the animals use their hind hoofs, which are very sensitive, to remove the velvet from the more inaccessible places. Seeing the animals do this has given rise to the belief that this is a method of oiling the horns, as there are certain glands in the foot which exude an oil or grease. I do not, however, think that there is the slightest ground for believing that this oil is used on the horns. The oil serves quite a different purpose, which I have dealt with elsewhere. The wonderful rich colour of the newly cleaned antlers is generally attributed to their being rubbed on certain trees, the juniper (also called tamarack and larch) and the alder being said to produce the most brilliant colours. Perhaps it would be wrong to say that this is untrue and entirely without foundation, yet I am inclined to utterly disbelieve the theory; rather do I believe that the brilliancy of colour correlates more or less with the age and vigour of the animal, those in the prime of life and bearing the finest horns being usually the ones to show the richest and brightest colour. Perhaps it is because there is a greater horn surface, and consequently the colour appears more conspicuous, but even that explanation is not altogether satisfying, for I have watched the horns of many different stags at very close quarters and almost always have noticed the lack of colour, or perhaps I should say the lightness of colour, of the long spindle horns of the very old stags, while the colour of the younger ones' horns appears to be

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rather dull, scarcely ever showing the wonderful orange so noticeable on the fine, large, well-developed heads.

Why should animals grow these great horns if not for the purpose of proving their power? And there seems to be but the one answer to the question. As already stated, the horns are worse than useless during the months of their growth, and almost as soon as the mating season has passed they are shed, those on the old stags going earliest, then the largest horns, and last those of the young stags. By November 10th, few good heads are to be found, while the young stags carry theirs until well into December, or even later. The does that carry horns retain theirs to the end of winter and sometimes into the spring. Theirs, however, mature later than those of the stag, the velvet frequently being seen on them until the middle of October.

To return to the big herd of caribou which I was watching, wondering whether there would be a fight, and if so, whether it would take place before the light became too weak for photographic work. The restlessness of the herd, especially among the stags, was becoming more and more noticeable; perhaps they considered the two or three hours' rest had been long enough, and the more energetic ones were trying to arouse those who were lazy and preferred to doze. Even my old spindle-horned friend was getting uneasy and had moved his position. It looked almost as though I might have attempted to take a photograph



Caribou Doe with one unusually long and massive Antler and one that is light. This is a particularly large Doe.

CARIBOU

of him, but it would have been a hazardous proceeding, as the slightest movement on my part would have probably attracted the attention of the many animals which were so close to me.

The stag whose horns had been tantalizing me for so long suddenly got up and stretched himself, behind a tree of course, and moved off, still keeping that tree between us, so that I could make no picture. I could plainly see that he was a good-sized beast, and carried a handsome and very symmetrical head of about thirty-five points. The greater part of the herd appeared to be working away from me, which was bad luck, but the worst of it was, at least so I thought at the time, that several does remained behind and therefore I did not dare follow the main herd. In fact, one of those does with her fawn started back, and it certainly looked as though she would pass me and so get my scent. With the utmost care I crept backwards a few yards, then she turned and passed in front, scarcely four yards away, walking almost on the very place where I had been standing. How she missed discovering me I could not understand. While watching her and her beautiful fawn I was suddenly surprised to see that many of the caribou were returning. Now I was in a predicament. If they should pass to leeward all chance of securing any pictures would be at an end, for of course they would go faster than I could, but fortunately they turned slightly and passed on the

windward side. It was an irregular movement, the whole herd being very much scattered; my old friend, the white doe, was, as usual, the leader. It seemed to me that the herd had grown a great deal, and that there were several stags which I had not previously observed. One very fine one, carrying a good head, appeared among the low trees about fifty yards away. Whether or not he belonged to the herd I could not tell. He stood facing them, apparently much interested in each one that passed, but not attempting to offer any attentions to the numerous does. Nearly every one stopped a moment to scrutinize him and then passed on. Suddenly there was a snort, the new stag became more keenly alert, then like a shot from out of the trees came the big stag, the master of the herd, and almost before I could realize what was happening he had struck the new-comer a frightful blow and knocked him clean over. Here, then, was the long-looked-for fight for which I had waited so many years. But how could I possibly take advantage of it? There were does and young stags all around, and the slightest mistake would cause my presence to be discovered, ending all my chances, and in all probability I should never have another opportunity of being within range of a real fight between two such splendid animals. It is unnecessary for me to say that I used the utmost caution in moving forward to where I might possibly succeed in getting a picture. My heart was beating

so violently that I breathed with difficulty, and my hand trembled so that I could scarcely manipulate the camera. Among the small scattered trees I could distinguish the two big stags; the fallen one had picked himself up and was now making strenuous efforts to withstand the onslaughts of his powerful antagonist. With lowered heads they came at one another, crash succeeding crash without advantage to either one.

How shall I describe my sensations as I watched this magnificent battle? To say that it was exciting does not express it at all. Here I was alone in the great wilderness. Perhaps I even regretted having no companion, for it seemed selfish to enjoy the spectacle by myself, yet in that way only can such a scene be watched to the greatest advantage. Another person would not only have divided my attention, but would have more than doubled the risk of discovery. The knowledge of such risk would have made me nervous, therefore I was perhaps just as well to be alone, free to concentrate my whole mind on the animals by which I was almost surrounded, free to move or keep quiet according to the movements of the keenly alert creatures; and so I strained my eyes to see without being seen, taking advantage of the low, scrubby cover which separated me from the mighty stags.

How their horns startled the stillness of the wilds! Each strike was echoed by the encircling woods which formed a perfect amphitheatre, surrounding the open

barren as though arranged especially for the purpose of hiding the primitive fight from the eyes of man. The stunted spruce trees, from whose gnarled and twisted branches hung wind-blown festoons of grizzled moss, were fitting accessories to the scene, for had not they also been engaged in fights since they raised their wiry heads from the many-coloured mosses? They had fought for six months out of every year of their lives against the driving storms of snow and ice which sweep this northern country from spring to spring, tearing away with merciless strength each weakling branch and leaving only the toughest, well-pruned twigs to carry the necessary weather-hardened leaves. As these dumb witnesses of the ways of the wild had fought for survival, so were the great stags now following out Nature's law—the pruning of the weakling branch—for the weakling must go, and the stags fought to see who was the weakling and who would be the trunk of the parent tree, responsible for the future caribou. The most powerful had that right, and he must prove his right by victory. For that reason alone were his splendid horns given to him, and he must be true to his trust. The coward, no matter how large his horns or powerful his limbs, would have no place in the order of things. He must lose in the game of life just as he would in the fight for supremacy, for so it has been ordered.

As I watched the two creatures, each striving with all the power of his strong-limbed body, I could not

help wondering at the merciless test which is demanded by Nature in order that the best and the best only shall survive. All else must be weeded out, or advance and improvement would cease. Retrogression would commence and the end would be in sight.

The pair of fighting stags seemed to be well matched. The master of the herd had the advantage of larger antlers, while the new-comer, who was darker in colour, appeared to be a rather heavier beast; they were both magnificent specimens and both intent on victory. At times their horns would be locked together in such a manner that there appeared to be danger of permanent entanglement. Then with heads lowered they would try to force each other backward. Every muscle was strained to its utmost, and the eyeballs gleamed white with the intensity of their passion. First one would gain a slight advantage, when the other, fearing defeat, would strain with renewed vigour and regain his loss. So they went back and forth, occasionally separating only to charge more furiously, each apparently hoping to get a better hold, or to strike a blow at the body of his adversary. But the spreading antlers are designed equally well for offence and defence; so long as the two animals are able to maintain the head-on position neither has much chance of gaining any great advantage, unless there is marked disparity in point of size. The brow antler, or snow shovel as it is sometimes erroneously called, is certainly an effective protection to the front

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of the animal's head and eyes, for it is practically impossible to pass this natural guard. At the same time, if this brow antler is well developed it can be used to lift the other stag's head. I noticed that this happened several times during the fight, but on no occasion was there any opportunity to take advantage of it.

In watching the two animals I was very uncertain how to act, whether to wait and see the fight to the finish, or risk disturbing it by trying to secure a photograph. I might never again have a chance of getting such a picture, but then I also wanted to see how it would end. Decision had to be made quickly, as the fight might stop at any moment, and I decided to try for the picture. It would be exceedingly difficult to use a camera under the conditions. Not only was there much scrub which would prove a serious obstacle—as you cannot photograph through bushes—but the herd of does and stags was scattered around three sides of me. If they detected the slightest move my chances would promptly end; it may therefore be easily understood that my position was an exceedingly difficult one. The first thing to do was to find my friend the big white doe; she proved to be in a clump of firs about seventy yards away, so that I was fairly safe from her prying eyes; then the immediate vicinity had to be examined in order that I might know where each animal was and be able to keep my eye on them all,

moving only when all heads were down or turned away. This may sound easy enough, but I found my two eyes woefully inadequate, and it was only with the greatest difficulty that I managed to move a few inches at a time without being discovered by my nearest neighbours, some of which were not more than ten or twelve yards away. How different from the stalking required for shooting! From where I crouched both of the stags could have been killed by even a poor shot, while, practically speaking, the camera could not be used without a complete change of position. Immediately I began to move on hands and knees a young stag that had been hidden by a small clump of bushes appeared so suddenly that I was caught as I was about to clamber over a fallen tree. Fortunately, I saw the stag at exactly the same moment that he saw me, so I remained immovable with one foot raised. In this very uncomfortable position did I remain 'frozen' while I was duly examined by the wretched stag. At last, after what seemed an interminable time, he appeared to be satisfied that I was only a rather peculiar stump, and he turned his head. Instantly I dropped—only just quickly enough—for at almost the same moment he glanced in my direction again, and was apparently rather bewildered at not seeing me. This was a critical moment. If it had been a doe she would, without doubt, have come forward to investigate, but the stags are much less curious, and after staring intently, he

walked away, leaving me to continue my very difficult stalk. In due time I succeeded in working my way past the worst of the obstructions to a place which offered me a fairly good sight of the two stags. There was only one small dead tree to interfere with the otherwise clear view. Now it was necessary to stand up very slowly and carefully, so as to bring the camera above the immediate foreground. With perhaps fifty caribou within sixty or seventy yards this was risky; however, I finally stood up and had the pleasure of seeing the two big fighting stags on the ground glass of the camera. It was a shame to disturb the two in their great struggle for supremacy, but there was no time to lose, for with so many animals about me I was bound to be discovered before long, so as soon as the focus was correct and everything examined I pressed the button.

What a pity it is that shutters were not silent in their working. (Nowadays with the great improvements which have taken place in camera construction the shutters are almost noiseless.) The slight click that was made was easily heard by one of the nearer does. For her it was sufficient information that something was wrong; what it was she did not wait to find out, she simply gave a loud snort—that aggravating signal of alarm—and the whole herd was on the move as though a bugle had sounded the charge, scampering as fast as they could towards the doe. On they came



Caribou Stag trying to bring back some of his absconding Does.

CARIBOU

at full speed, trotting and jumping, some coming straight towards me, others going near the fighting stags, who, of course, took the alarm at once, forgot their grievances and each other, and trotted off with the herd. All of this took but a few seconds, so quickly did they rush past and so close that I forgot, in the excitement, to reload the camera. Too late did I get my wits together and put in a plate, then I rushed out a few yards clear of the trees and made an attempt to secure a photograph of the white-flanked herd, now thoroughly frightened, as they splashed across the wet barren, filling the air with sparkling drops of water and pieces of moss, and leaving a trail as though a regiment of cavalry had passed. There must have been fully one hundred and fifty altogether, as nearly as I could estimate; evidently the main herd, unknown to me, had been joined by many others during the hours I had been so intently watching those nearest to me.

Now it was all over. Once more everything was as calm and quiet as we expect the wild land to be. The pent-up excitement of the past minutes (or was it hours?) was gone and there remained no visible evidence of all that occurred, nothing but the latent image on the photographic plate and the sense of great joy and satisfaction in having obtained at least some sort of picture of a real caribou fight with real, well-grown stags. Now, indeed, I might snap my fingers and laugh at those well-meaning people who had tried so

hard to discourage me. That I should ever be fortunate enough to again witness such a sight was doubtful, so I was particularly careful of the precious plate on my way back to camp. It was late in the afternoon, and I had far to go, but that long walk seemed short, the difficulties of getting over the soft bogs were unnoticed, and as I paddled down stream to my solitary camp I came to the conclusion that camera-hunting was a fine game, notwithstanding the remarks to the contrary which had been indulged in by some of my friends who still consider it a namby-pamby form of sport. It was altogether a day to be remembered, a day to be marked with a big red star. Everything appeared in attractive colours, the gaunt grey trees which lined the banks of the river seemed to be old friends who nodded their grizzly heads at me as I passed along the quiet waterway of the wilderness; even the low murmuring of the wind through the firs seemed to congratulate me on my good fortune. The day was almost at an end. The setting sun left the river in deepening shade, and as I slowly passed the homes of my beaver friends, the little fellows appeared in their noiseless way on the surface of the water, their small bright eyes staring intently at the drifting canoe until a current of air carried the scent of hated man to their nostrils, when the silence of the evening was instantly broken by the terrific signal of alarm—the striking of the water with their heavy muscular tails—as the animals

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dived and sought the protection of dark waters. When they reappeared I was landing at my camp, where I was soon busily engaged in making ready for my evening meal over the crackling fire, the delight of which can only be properly appreciated by those who live alone in the woods, for to them it is the cheerful companion of the long autumn evenings, the last thing to be seen or heard as the healthily tired body drops off to sleep, the undisturbed dreamless sleep found only in the land of pure unspoiled air far from the haunts of man.

Before going into the question of the autumn and spring migrations it would be well to look at the map of the island on page 166, on which I have marked the approximate course that used to be taken by the caribou. The northern peninsula is mostly high country—rugged mountains—parts of which have as yet scarcely been explored. A great deal of this mountain region is very bare and exposed to the frightful storms which blow down from the Arctic regions, storms of driving snow and icy rain which must sweep the unprotected hills with appalling force and render life difficult, if not impossible, for animals which feed chiefly on the ground mosses. The severity of the storms is beyond all belief; for days at a time no living creature would dare venture away from the protection of the woods which, unfortunately, are not over-abundant. The

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snow, piling up from these relentless storms, covers the land to a depth of many feet so that much of the wild pasturage is lost to the caribou, except in the woods and on the ridges where no snow can lay, for no sooner does it fall than the howling winds pick it up and carry it headlong into the valleys. It must be a wonderful thing to see these whirling snow imps dancing over the bleak mountains, but for the caribou it is a sight to inspire dread, for it spells hunger. Not only is the deepening snow a source of danger to them, a worse one lurks about these open wastes, and to a lesser extent the woods: the 'glitter', as the Newfoundlander calls it, freezing rain which ties everything up in its icy grip. Vegetation and all that goes to sustain life for the caribou is buried securely in a shroud of glistening ice too smooth and too hard to be broken by the hunger-driven beasts. This is a possible if not a probable reason for the animals going south as the winter approaches. South to where the kindly influence of the Gulf Stream tempers the cold and makes life more endurable to the great herds of hungry creatures. How do they know what is going to happen, or that by going southward they will find better conditions? It was not learned in a day or a year, but gradually, during the many hundreds of thousands of years that have passed since the caribou first wandered into Newfoundland. Then, probably, it was not an island but part of the mainland, joined to what we

CARIBOU

now call Labrador, and from which it is separated by the Straits of Belle Isle.

Before the island was formed it is more than probable that the caribou spent the summer months further north, in the region where to-day we find the vast herds of the Labrador species. Perhaps what is now Newfoundland was then the great winter resort for immense herds. One cannot say for certain, because the weather conditions which prevailed in those days are not known with absolute certainty. The past is wrapped in so much mystery, and our theories continue to change as we investigate more carefully; what to-day seems a certainty is to-morrow thrown aside for newer and more advanced ideas, and we never know what is the final decision. Such being the case, we must be satisfied to study the migration chiefly by the more recent conditions, and for lack of a better reason we are practically forced to the conclusion that the search for food was the cause of the southerly move. But what about the return journey? Why did the animals go back to the north? So far as we can judge from appearances the conditions in various parts of the island do not show any great differences during the summer; the food in the more southerly parts is about the same as in the north, it is certainly abundant, and there is no doubt that it is what the caribou wanted, for otherwise so many of them would not have remained scattered over the country which was abandoned by the northern

herds when winter had passed. The theory advanced by some writers that flies play an important part in the cause of migration is, I believe, utterly without foundation, because the black fly is found in practically every part of the island during the summer months, and the northern peninsula has its full share of these pests. Even on the highest ridges, rocky and with only the scantiest vegetation, miles away from the forests, the black flies have been found to be so numerous that they made life miserable; therefore, when the migratory herds leave the south they did not escape the warm-weather pests. In the very few places where the black flies are scarce, there were but a few scattered caribou during the summer.

It is not my wish to upset anybody's pet theories, but the migration subject is of so much interest that as many facts as possible should be accumulated from which some definite knowledge may be derived. For my own part, I have found it impossible to advance any explanation which will stand even my own cross-examination, and I am almost forced to believe that the conditions which originally made the semi-annual migration a matter of necessity had passed, but that the animals having acquired the habit were slow to give it up. If all, or practically all, the caribou in the island took part in the great movement, this theory would have very little to recommend it; but when we consider that a great many animals spent the winter

CARIBOU

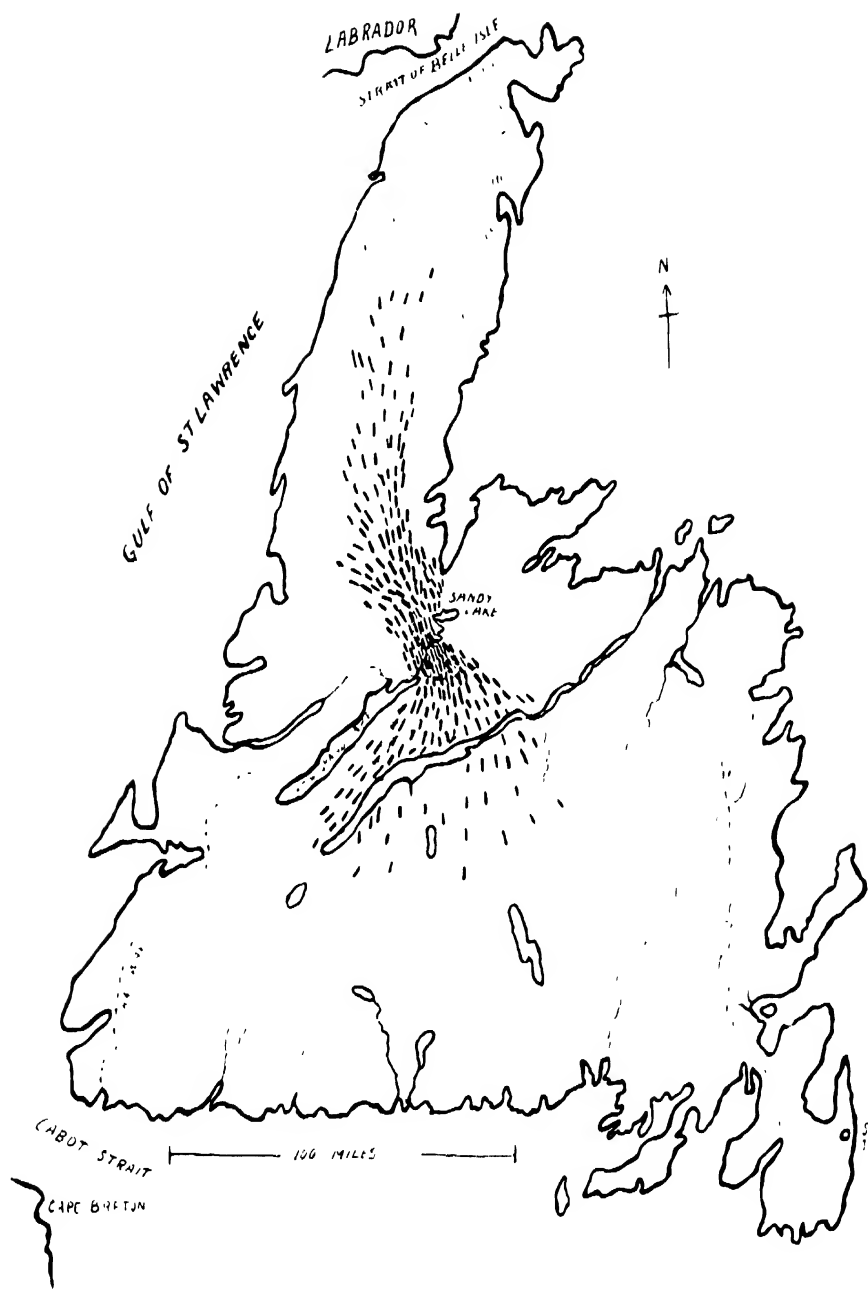
in the north, almost to the extreme end of the peninsula, and also that a great many remained during the summer in the more southerly portion of the country as far as the coastline, there seems to be some reason in its favour, and I feel almost sure that there was no natural cause which would have prevented the animals living permanently in any part of the island, provided, of course, that they did not concentrate and thus deplete the food supply.

When first I took up the subject I was told by many people, including sportsmen and guides, that *all* the caribou left the northern peninsula on the appearance of the first snow. A trip to the north soon proved to me the incorrectness of this, for not only did residents of the region in question—trappers and others—tell me that the animals stayed all the winter, but I found a fair number of very fine shed antlers to prove that the large stags were there at least until the middle or end of November, and as some of the antlers were those of small stags and does, the former of which did not shed till well into December or even later, while the latter carried theirs till almost spring, there was no question of the existence of the caribou throughout the winter. The proof that they stayed in the south during the summer was equally good, though I did not see them myself, never having been along the south coast, but I have been told on thoroughly reliable authority that such was the case, and I have actually

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seen the caribou during August south-east of Grand Lake in the magnificent high country back of 'Old Harry'. All of this goes to prove that the migration was by no means general, but was only indulged in by a part of the animals, I should say probably the larger part. Now whether these were creatures which were slower to change their habits no one can say, but such may possibly have been the case.

The idea which seems to have existed pretty generally that the autumn migration began between October 15th and 22nd must not be relied on too implicitly. The season was extremely variable, ranging from October 12th to almost the middle of December, though it might usually have been expected between October 20th and November 5th, depending almost entirely on the weather. A heavy fall of snow appears to have been the signal for the start; if, however, it was followed by a prolonged spell of good weather, the animals either remained scattered about the flat country near Sandy Lake, or they continued slowly and in a very irregular way towards their winter quarters. With the advent of cold or snows the movement invariably became more or less general, and was extremely precipitate when the cold was intense or the snowfall unusually heavy. The sudden freezing of the waters spurred the animals on at a terrific speed, and wonderful stories have been told of how the stillness of the night used to be broken by sounds like thunder, as



Sketch Map of Newfoundland.

The heavy dotted marks indicate the general line of the Caribou migration as it existed up to about 1911.

CARIBOU

vast numbers crashed through the frozen lakes and rivers, impelled by a frantic desire to escape being caught by winter in the flat country where the snow lay so deep that food was buried and travelling made difficult. It has never been my fortune to witness any of these stampedes, though I have gone to the island year after year in the hopes of being present at something of the sort; still it does not require much imagination to picture the scenes. I have several times watched herds breaking through the small ponds, which were coated with ice half or three-quarters of an inch thick. They scarcely noticed it as they made their way through, their sharp hoofs cut it without difficulty, and as their legs are well covered with thick hair they were well protected against being cut by the knife-like edges of the ice; but when the ponds were covered with a heavy coat of smooth ice not quite strong enough to bear the weight of the animals, it must have caused great trouble, especially if the water was deep and swimming necessary. Whether or not they went in single file as they do through deep snow I cannot say, but it would be reasonable to suppose that they chose the easiest method unless they were in a hurry, when probably they crashed through in a body. I judge this to have been the case from the accounts I have received which stated that the path through the frozen ponds or rivers was a broad one, and that the ice was broken up to an extraordinary extent.

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The great path of the migration was between Sandy River, where it flows into Grand Lake, and about fifteen or twenty miles to the east. Here it was that the great mass of the animals passed, and here it was that some years ago, shortly after the opening of the railroad and before the enactment of good game laws, the awful slaughter occurred which gave J. G. Millais the opportunity to make his well-known very humorous sketch showing sport in Newfoundland. It was said that as the train came along immense herds of caribou appeared, and as there were many sportsmen and so-called sportsmen on the train, a grand fusillade commenced, which resulted in the most ghastly butchery. I do not recall the details, and anyhow they are better left unwritten. But great good resulted from the bloody affair, for it caused the passing of splendid game laws and the making of a reservation that included the whole region through which the herds were most closely concentrated before they separated to find their winter quarters on the higher lands. Not only was no shooting of any sort allowed on this reserve, but I am glad to say that even camping was forbidden. This was a most important improvement, because so long as men were allowed to camp there they could (and frequently did) shoot without much fear of being caught. This is not said in criticism of the game wardens, because in a country like Newfoundland the natural conditions offer every protection to the poacher.

CARIBOU

He could kill within a very short distance of the wardens or rangers and still escape with little or no difficulty.

Before exhausting the reader's patience by this long-drawn-out dissertation on the migration, it might be well to tell something of the habits of the animals during this period. I have already shown that the mating usually occurred immediately before the final start southward, so that everything was in a peaceful condition. Jealousies and fightings passed and were forgotten, truculent stags became as quiet as old cows, and all were friends once more. The first fall of snow warned them that it was time for the start, and so they headed in a general southerly direction, going fast or slow according to the weather conditions. Usually they came at a very rapid walk, in herds numbering from three or four to about one hundred and fifty. There is absolutely no foundation for the statement that has been made that the herds never numbered more than twenty or thirty. In a single day I have often seen four or five herds containing between fifty and seventy-five, and have frequently counted a hundred or more going along together. Most of the travelling was done by daylight; in fact, except during a storm, they seldom moved about much after dark. I should say that the best time to have seen the caribou passing was between sunrise and half-past ten. During the noon hours they usually kept

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fairly quiet, but there was frequently quite a movement about an hour before sunset.

Sitting on the banks of the river one could often hear the almost continual splash-splash-splash, as herd after herd entered the water to swim across. It must not be thought that the migration meant the moving of all the animals together. Each herd kept pretty well to itself, though two or more small herds frequently merged together. It is barely possible that, at the actual start, the herds were of immense size, and that they broke up as they proceeded. I suggest this theory because on some days a great many herds appeared along the same leads or paths, as though they had all started together, while other equally good leads were not used for many days in succession. So noticeable was this that in watching for the animals I often selected a place where I had either seen one or two herds pass, or where there were very fresh tracks, and remained there for the entire day, with results which frequently justified such a course. Each year saw a slight change in the route selected by the greater number of animals. What was a first-rate place one year may have been entirely unused the following season, the general trend having been perhaps less than a mile further to the east or west. The cause of this was unknown, but was perhaps accounted for by the rising or lowering of lakes or rivers, either by natural causes or by the dams built by beavers. The roads made and used by the

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caribou proved that they had been in use for countless years. In some places the rocks were worn away to a depth of one or two feet by the thousands and thousands of hoofs which had passed over them, each hoof wearing away its minute particle, just as drops of water will gradually eat into even the hardest stone. Over the softer barrens, the paths, though equally distinct, were far more numerous, as the herds did not always travel in single file; to do so would have cut into the soft bog, and the trail would very soon have been converted into a stream, for water abounds almost everywhere on the island. So it was that the barrens on the line of the migration were cut up by the innumerable paths which converged where the land became harder, or in the immediate vicinity of a river-bank where the deep-cut paths were conspicuous. Through the forests the leads, though clearly defined, were very devious, for if a tree was blown across the path it caused the animals to swing to the right or left, with the result that the following of a caribou road caused one to twist and turn, until one's sense of direction became very much confused, and only a clever man could have followed the same trail twice.

How the stags with their large horns ever made their way through the dense, tangled wood is very difficult to understand, for a man had all he could do to get through by twisting, bending, and even crawling; yet the caribou seemed to experience absolutely no

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in a purely natural way, following their habits with no disturbing condition to influence their behaviour. There is something so peaceful and satisfying in it, that it makes a life-long impression on anyone who has been fortunate enough to have the opportunity of observing the animals under such conditions, and one cannot help wondering why some people who are really fond of outdoor life do not more freely indulge in this form of pastime. Perhaps it is because they are unable to bring home any visible result of such a chase. Nothing to show their friends as proof of their experiences. Yet will not these same people go to an opera and thoroughly enjoy the music, content only to have their senses satisfied without thought of having to prove to anyone that they did enjoy the transient pleasure?

Not for anything would I give up the memories of my most fortunate days in the land of the caribou. These memories will live so long as I live, while the discomforts and the disappointments—which were many—are happily forgotten, they are hidden behind the screen of fortunate experiences. Certain days stand out with delightful clearness, days when conditions were satisfactory and things happened. Let me tell of one such day even at the great risk of boring the reader. It was after a night of bitter cold, such penetrating cold as one only finds in the northern countries. My solitary camp on the banks of Sandy River had for many hours been blown about by the icy wind, which

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found its way through the heaps of spongy moss that held down the sod-cloth. The early supper had been cooked under most unfavourable conditions, as the wind-blown smoke drove me from one side to the other and filled my eyes so that I was glad to seek the shelter of the tent in which, unfortunately, I had no stove. It was far too cold to sit up, therefore after finishing the badly cooked meal and filling the plate-holders of my camera for the next day's work—a difficult enough task as *my fingers were benumbed*—I sought the inviting comfort of the blankets at about seven o'clock. It was too early to sleep, and I was too cold to read, as the breath froze on my glasses; so I lay in thought, wondering what would be the end of the storm. Would it bring snow, and the snow bring caribou? So far, very few had passed, though the snow further north had certainly started the migration. Sleep came gradually, and some hours later I awoke to hear the snow gently falling on the tight roof of the tent. The wind had died away, the welcome sound of the flakes filled me with hope, and once more I slept to dream of the morrow. When I opened my eyes again, the snow was no longer falling; everything was bathed in moonlight, so cold and so quiet and so wonderfully beautiful. It was scarcely five o'clock, nearly two hours before the dawn, and for an hour I waited impatiently, only too anxious to be out on my favourite leads watching for caribou. Then

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no longer able to wait, I got up while the woods were still bathed in the mysterious moonlight. A fire was soon started, and in the still air the smoke and sparks rose without curve or flicker, a column of red and blue, like a ghost against the background of frosted trees.

The snowfall had been light, and had been followed by a keen frost which coated each twig and leaf. How can anyone describe such a morning! No words, however well chosen, can give even the slightest suggestion of the beauty of it all. The curious stillness in itself was indescribable. Nothing disturbed it but the cheerful crackling of the fire, and the scarcely perceptible purr of the floating ice, as it brushed against the overhanging branches on the river bank. Amid such surroundings my simple breakfast was eaten entirely alone, as my friend and companion, the Canada jay, was not yet awake. I missed the confiding bird, for he usually shared my porridge with me each morning. Sitting on the log by my side, he would look up into my face with his large dark eyes, and with a soft murmuring note beg for his share. I never got tired of watching him and his ceaseless energy. He would eat very little, but spoonful after spoonful would be carried away and hidden most carefully in the trees, behind the curling bark of the large birches, in knot holes, and in cracks, so that his storehouse was in every tree that surrounded my camp. Well did he know what the winter meant; the long, cold months when all

A Herd of Caribou crossing a River.



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would be covered with snow. No berries would then be found, for beneath the snow they were being preserved for the early spring supply. Life for many months would be dependent on the carefully arranged stores placed well above snow level. And so my little companion continued each day to lay up his stock of winter food, nothing too small to escape his searching eyes, and anything I wished to keep had to be well hidden, for during the day while I was away from camp the jays from all the neighbourhood met and cleared camp for me, leaving no trace of food exposed. It is no wonder that the untidy camper dislikes these birds and calls them robbers, and rather than be tidy he kills the birds which are such cheerful company to the solitary man.

At the first gleam of day my canoe was in the water, after the ice near the bank had been thoroughly broken, and I was soon floating noiselessly on the smooth, dark water. Beautiful crystal snow-flowers had formed on the ice, which in some places was moving slowly with the current. The banks of the river were entirely covered with frost and snow-coated trees and grass, so that the whole country looked like a fairyland, and one almost expected to see gauze-winged elves peeping from behind the glistening trees. Indeed, it was not long before a slight crackling among the bushes announced the approach of some living things, not fairies, but beautiful silvery caribou, fifteen or

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twenty of them; snow-white fawns, whose dark eyes alone stood out clearly from the pearly background; large does, white and grey; and a white-necked stag whose orange-coloured antlers broke the sparkling ice from surrounding bushes. The little herd stood for a moment on the bank, examining the strange dark object which floated so quietly down stream. The commanding doe decided that it was not dangerous, and gave the order for advance, and immediately the ice which skirted the bank was being rudely broken by the animals, as they entered the river and swam silently across scarcely a hundred yards from me. On landing they stood still for some minutes, looking about them to see that all was safe, then each one in turn shook the water from its heavy coat with such vigour that the air was filled with fine spray, which glistened in the rosy light of the rising sun. Then, following the leader, they all disappeared among the trees, taking a lead near which I expected to spend the day. Seeing the animals moving so early was a good omen, and I went ashore filled with hopes and the anticipation of a glorious day's sport.

The landing-place I selected was well clear of the leads, so that I could make my way without fear of leaving any disturbing scent. Walking through the thick underbush was a noisy job, as the twigs were so heavily coated with ice that they crackled loudly at every step. In about twenty minutes I found myself



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safely within the shelter of fir trees which I had arranged some time ago. A better place would have been difficult to find. It was perhaps a quarter of a mile from the river, on the outskirts of a very large barren. On either side of the blind, or gaze, as the Newfoundlanders would call it, were a number of splendid well-used leads or paths converging from many landing-places; thus most of the caribou which crossed over an area of nearly half a mile would be more than likely to come within easy range of my battery of cameras, provided the wind remained in the north. Should it change and blow from the south the place would be absolutely useless.

While I was arranging the cameras so that they would cover every lead without having to be moved, the sound of crackling ice and splashing water warned me that a herd was coming. The light was still too weak and yellow for instantaneous photography, so with a clear conscience I would be able to enjoy watching the animals. It was not long before the deathly stillness of the morning was broken by the sound of the approaching herd. Had there been no ice on the twigs there would have been no sound, save the curious cracking of their feet; but the brittle ice made noiseless walking impossible for man or beast. Soon they appeared: a small 'company' of eight. By good luck there was no large stag. I say good luck, because with the impossibility of using the camera a big stag would

have been a thorough aggravation. At first the animals were almost lost in the long blue shadows, but as they came clear of the low trees the pale-yellow sunlight flickered across them, painting their white necks with delicate, indescribable colour. One very light-coloured fawn was particularly beautiful, with his soft, almost fluffy head and large dark eyes, a real live fairy in the icy wonderland. In single file they came, with the inevitable doe at the head, nearer and nearer to within a few feet of where I stood enjoying this true natural history picture, so quick to come and so quick to go, deliciously aggravating, because there was no time to sketch it in with paint, and not light enough for even a colourless photograph, only barely time to fix it on the mind so that it could be used some day in a most inadequate painting. The picture had passed almost before I had realized the beauty of it all, and in a few seconds nothing remained but the broken, mud-splashed ice to show where the little herd of south-bound animals had walked in the trail which had been used by their ancestors for countless ages.

That the animals had passed my blind without being frightened was most fortunate, for by so doing a trail had been established. This was very important, because any other animals would feel more secure in following the same trail. For this reason, it had been my practice for several years to allow the first herd to pass undisturbed. Often I have noticed that when



After landing. The Doe on the left is shaking herself like a Dog.

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caribou (and I do not know whether this applies to other deer) are startled they leave some signal on the ground which warns every animal that comes to the place. Of course, I cannot definitely explain how this is effected, even though I am absolutely sure that it does happen, and I say this even at the risk of having some doubting Thomases say that my imagination is over-fertile. Unfortunately, I have no imagination; were I thus endowed I could write books about wild animals which would appeal to the great public, and incidentally bring me large cash returns; but facts, and facts only, appeal to my prosaic nature, and I can vouch for the truth of what I state regarding the caribous signalling by this invisible method. Not once, but on many occasions, I have seen one or more caribou walking quietly along a trail, when suddenly they have been frightened, either by seeing me move, by the sound of a camera being arranged, or worst of all, by a draught of wind carrying my scent to them. Whatever the cause makes no great difference. On being startled the animals have jumped; then, after standing still for a moment to examine the cause of their alarm, they have bolted. For hours afterwards *every* caribou, on arriving at the place where the frightened ones had jumped, has started violently, and has on nearly every occasion turned and run in a manner that showed every indication of fear, even though my presence was entirely unknown to them. My idea is

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that when the animal is suddenly frightened it expels a certain fluid from the glands in the foot, and that this fluid is a signal of alarm, a silent and invisible warning, but none the less so positive that none dare ignore it. Whether this fluid is expelled voluntarily or by a purely mechanical effort, I do not pretend to say, but it is quite possible that the sudden jumping causes the hoof to separate, and that in doing so the glands are brought into operation, so that a minute particle of the fluid is left on the ground. Photographs which I secured after much difficulty show clearly the spreading of the hoofs when the animal was startled. I can almost hear the reader say 'Bosh!', but will he give any more plausible explanation? If he can, I shall be delighted; if not, let him at least be patient and not condemn my theory too harshly.

After the small herd had passed it was some time before anything exciting happened. The rising sun was slowly melting the frost and light snow, so that every minute reduced my chance of securing a picture of the animals in ideal surroundings. I pictured to myself a splendid stag standing on the glistening carpet. How beautiful he would be, and how his richly coloured horns would stand out from the pale background! While I was thus engaged in arranging each detail to my satisfaction, a young stag actually appeared, so quietly that he seemed almost as a reflection of my thoughts. True, my plans called for a big stag with

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record head, while this approaching animal was a small one with insignificant horns. Still it was a stag, and he was evidently coming near enough to be photographed, and the snow was not all melted. So I accepted gratefully what the gods offered, and as the stag came within range I shot him with the harmless camera. The slight report of the shutter sounded woefully loud in the still air: loud enough to thoroughly frighten the animal, for he quickly turned from the trail and was almost immediately lost among the stunted trees, but I had secured an interesting picture.

It is in such cases as this that one realizes and appreciates the difference between camera-hunting and rifle-hunting. Had I been armed with the rifle there would have been no sport for me in this incident. The stag was certainly not worth shooting, for his horns were small and unshapely, and would not have satisfied anyone but the merest novice. But the camera is not so particular; interesting pictures are made of the most simple subjects, and though a record stag would have caused very much more excitement, this little fellow gave me great pleasure, as he completed a picture which was beautiful in itself, even without any animal at all, but still more interesting with this touch of wild life.

For some time after this small stag had passed I sat waiting for another visitor to my outdoor studio—the studio for which no landlord clamoured for

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monthly rent, and which was not restricted in size. The walls were the forests, the roof was the sky; no dusty rugs covered the floor—my carpet was the moss, whose colours were more varied and pattern more complicated than the finest weaves of Persia. And it was all mine. My models came without knocking at the door, and departed without leave. In such surroundings who would not be happy, who would not be grateful for being alive and well? And, above all things, free to enjoy the fresh fir-scented air, the primitive beauty of it all. What more could man ask? Sour indeed must be the disposition of him who found fault with such surroundings. Some might say the air was unduly keen. Perhaps it was; but only when I wanted to use my fingers to manipulate the camera or pencil did I realize that they were frozen.

An approaching herd of caribou made me almost painfully conscious of the fact, for suddenly from every direction they appeared, breaking their way through the fringe of alders and low spruce trees. Something must have frightened them as they were crossing the river, for not until they left the trees did they shake the water from their dripping coats. Then on they came, some trotting, some walking, all in a hurry and most of them heading straight towards my blind. What a beautiful sight it was! Fully a hundred of the splendid deer splashing through the snow and ice. Unfortunately, a heavy cloud hid the sun so that



"Nearer and nearer he came."

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the light was bad. But there was another handicap still more serious. My hands refused to do their work, the focussing screw of the camera would not respond to the senseless touch of my numbed fingers. It was maddening. Animal after animal passed, some good stags among them, and they were within fifteen or twenty yards, while the camera was focussed for nine yards, and unless any of the animals came within that range I should be unable to get a picture. At last, a rather small stag, with about thirty-point horns, came along the lead which was directly in front of me. Closer and closer he came, and I watched the ground-glass intently as, from a dim blur of grey, he gradually took shape, becoming more and more clear and defined. He was rapidly filling the plate, and it seemed as though I should not be able to get him all in by the time he reached the point of focus. There was no time to spare, for at the moment that he showed sharply in focus he exactly covered the plate, and I pressed the button with the side of my hand. He was scarcely nine yards away. Never have I seen a more thoroughly startled animal. In the stillness of the morning the sound of the shutter was alarmingly loud, and the stag apparently believed himself shot. He nearly tumbled over backwards as he jumped clear of the trail. Then he stopped a moment and stared at me. The rest of the herd also looked in my direction. What a splendid chance it was for another picture! But my

hands which I had attempted to thaw in the clean snow were too cold to work quickly, and in vain I fumbled at the plate-holder and shutter. The herd stood but a few seconds, and satisfied that I was a very dangerous person, armed with a very formidable weapon, they speedily vanished, kicking up great lumps of snow as they galloped off. Some of those furthest away, not knowing where the source of danger lay, came crashing past within a few feet of where I stood in the shelter of the spruces.

The light was becoming very uncertain. Great clouds were rolling up, so that the sun was obscured most of the time. In Newfoundland this often happens on mornings which are unusually bright and clear. From a photographic point of view it is most unfortunate, as very quick exposures are impossible without sunlight, and it always happens that the animals appear at the very moment when the sun is hidden behind the heaviest clouds. There seems to be a fate about it.

An hour or so passed before my next visitors appeared: a doe and a fawn this time—the finest pair I have ever seen. Many of the does are heavy, square-built, and lacking grace of form; but this one was nearly as finely built as a wapiti, and the fawn was a picture of grace and beauty, a perfect harmony of soft grey tones. They approached slowly, and when within about sixteen yards I gave a snort to stop them, and as they stood still I secured a photograph. Scarcely



Two Beauties: a Caribou Doe and Fawn.

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had this pair disappeared than a large herd, numbering perhaps seventy animals, came in sight. Evidently the migration was in full swing, and the slight snowfall had hurried the animals on their journey. It was a pity that the light was not better, for though the herd contained no very large stags, it would have been a splendid opportunity for making an interesting picture, as they were well bunched and coming at an easy walk. A picture was secured, and then they all passed close to the blind without being aware of my presence, for the noise of their hoofs had drowned the inevitable click of the shutter. No sooner had this herd reached the open barren at the back of where I stood, than there was a sound of animals crashing through the trees about a hundred yards away. Leaving the blind, I hastened to a high knoll from which I should be able to see them. As they came into the open I counted about fifty caribou; among them were two magnificent stags, with horns that would count fully forty points. They were going too fast and were too far away to photograph, and as they joined the part of the herd which had passed me, I could not help experiencing a feeling of regret that the big stags had not been among those I had photographed. As it was, I had to be content with what I had secured, and with the pleasure of seeing such a splendid pair.

About half an hour later the sound of six shots in quick succession reached my ears from the direction

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which the animals had taken. Had either of those two stags fallen? Perhaps so. Then no one would ever have a chance of photographing them in all their glory of life and vigour. It seemed a pity. Camera-hunting makes us uncharitable enough to hate the man who shoots, for he kills our models. Perhaps, on the other hand, the man with the rifle despises those whose weapon is the harmless camera. I know for a fact that in certain places (names are best left unwritten) camera-hunting has aroused strong opposition among both guides and hunters, for they claim that the animals are so badly frightened by the persistent chasing done by the camera-hunters that they become wild, and consequently shooting grows more difficult. I contend, however, that too much camera work will finally have the effect of making the animals over-confiding. They will discover that even when a man happens to get within a few feet of them it does not always mean death, and then perhaps they will not discriminate between those who are armed with the camera and those whose weapon is the rifle. However, that is the dream of the future, when the camera has to a greater extent superseded the rifle.

A sound of splashing in the river aroused me, and I returned to my stand to make ready for possible visitors. It was not long before a small herd came into view; there was a young stag with a very pretty but rather small head of about thirty points, with the

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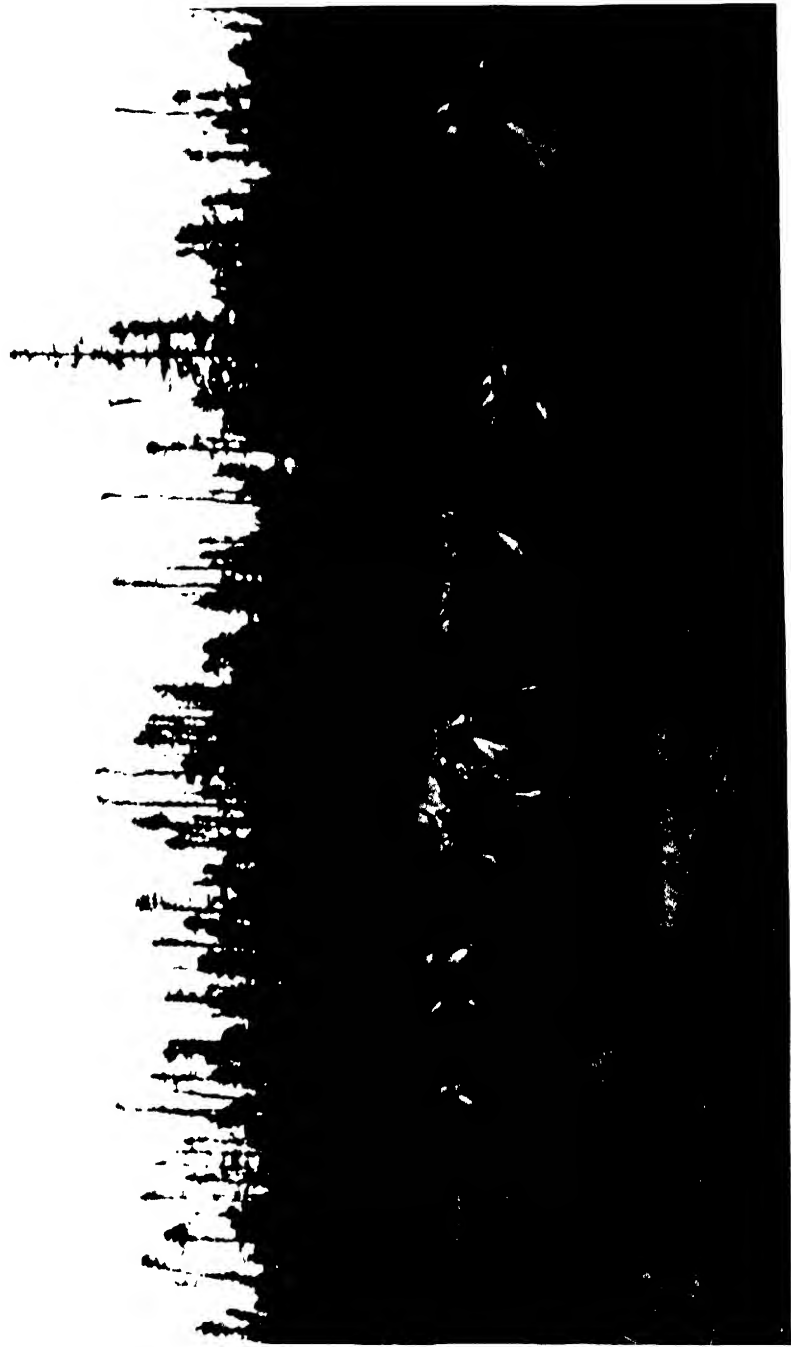
brow antlers noticeably far apart; with him were three does and a fawn. Curiously enough, they were following behind the stag, a very unusual occurrence, which I have only seen with three or four out of the many thousands of caribou I have watched travelling. The little band came along until they were within less than thirty yards, when the does stopped as though not quite certain that all was right before them. The stag continued to approach, walking slowly and without sign of suspicion until the click of the shutter awakened him to the possibility of danger. The does took the alarm and made off to one side, and almost before the sound of the shutter had died away they had all disappeared among the trees.

This was evidently one of the lucky days, at least so far as numbers went. Over two hundred and fifty caribou had passed, and many had come unusually near. Dame Fortune was kind in all but the matter of light, which had been most unsatisfactory. However, it might have been worse, for I had been able to secure some reasonably clear pictures. The day was still young, the light might change for the better and more caribou might come. Perhaps even another great big stag would come, like the monster I had photographed once before. What a morning that had been!—when I had realized the hopes of years in securing a sunlit picture of a perfectly typical line of thirteen caribou under the most favourable conditions,

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showing them on the migration, travelling as they are supposed to do, and at exactly the right angle to the camera. No one can believe how much pleasure that experience had given me. It was what I knew *could* be done if only one had the luck to be on hand and ready at the proper moment. How many times it had nearly happened! But some little and seemingly insignificant detail had each time prevented success; and then, as though that was not enough for one morning's work, had not the immense stag come along while the sun was still shining! How excited I was when I realized that within sixteen or seventeen yards was a real stag with horns carrying full forty-five points. What would not any guide have given to have been able to offer his sportsman such an opportunity! I scarcely dare think what their opinion of me would have been for only shooting with the harmless camera. Surely they would have regarded it as an opportunity utterly wasted. But that day was one to be remembered, to be treasured up in the storehouse of happiest moments, the storehouse which is never filled.

This day of many caribou, though not yielding extraordinary chances, was, everything considered, one of the most interesting in all my experiences, for I was seldom left long without at least a sight of the animals. True, I did not get any startling pictures, but before the day had passed I had used up all my plates, and secured nearly a couple of dozen photographs, many of



"I realized the hopes of years in securing a sunlit picture of a perfectly typical line of thirteen Caribou—on the migration."

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which were of particular interest, as they showed good types of caribou, some unusual horns, and the earlier ones depicted the animals travelling on the snow-covered ground, a condition which I had not previously succeeded in getting. Altogether, I saw over five hundred caribou before returning to camp, surely enough to satisfy even the greediest of hunters. Had the sun only been a little more generous, the pictures would have been better, and no apologies would then have been necessary for the dullness of some of them.

That day's work, though an exceptionally lucky one, will give some idea of the southerly migration, of how the animals used to travel and how abundant they were; also of the great pleasure there was in watching them. It is a form of sport which all may enjoy to the utmost, free from the necessary restriction of game laws, for with the camera the game bag is never filled. There is always room for more.

The migration was so irregular that anything like a rule for procedure must be so full of exceptions as to be of very little value, but in a general way it may be said that once the start was made, the movement continued with more or less interruptions, according to the weather, until all the animals which intended seeking the winter quarters of the south had passed the Sandy River region, and that usually happened by the middle of December. The earlier herds consisted chiefly of does, fawns, and younger stags, then more

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stags appeared, and these were, as a rule, the larger ones. Supposing that the migration started on October 22nd, and that ordinary weather conditions prevailed—that is to say, some snow and fairly cool days and cold nights—we might have expected the big stags to be crossing Sandy River between October 26th and November 15th. Later on, I was told, great herds of stags came unattended by does, but these I never saw, even though I waited until December 5th; one autumn, however, was exceptionally mild, and practically no animals passed before the last of November. A heavy snowfall on December 6th brought immense numbers, both stags and does coming together in one great rush. Unfortunately, I just missed the sight, and therefore cannot give any first-hand information. A late season was most unsatisfactory, because the stags used to shed their horns very early, the big ones seldom carried theirs later than the middle of November. By the end of that month the migration, under ordinary conditions, should have been practically at an end. Stragglers may have continued to come for several weeks later, but, unless the weather was unusually mild, one could not have expected to see any large number after December 1st. In the autumn of 1912—an exceptional season—conditions prevailed which caused the animals to act as they have seldom been known to do. Not only did the migration start very much earlier, as already mentioned, but it lasted only

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about two weeks, which was quite unusual for an early season. The guides refused to believe that the great mass of caribou had passed before October 21st; they even laughed at me for suggesting such a thing; they had never known it to happen before, therefore it was not possible. In vain did I tell them that the immense numbers which had passed over the region where I was working represented most, if not all, the animals that could be expected to pass during the whole season. I suggested that they should take their camps southward, following the herds rather than going to meet them as they usually did, in order that they would be in the vicinity of their game when the shooting season opened. This advice was disregarded, but I subsequently heard that scarcely any of the hunting-parties that went to meet the migration were lucky, while those who went south of the railroad succeeded in their object.

All of this goes to show how uncertain are the ways of wild creatures, or perhaps I should say, how dependent they are on conditions which we do not understand or appreciate. The autumn of 1912 did not appear to be different from an ordinary season, yet undoubtedly there was something which we did not observe, but which had its effect on the caribou. When we hear anyone say that animals *always* do this or that, we may be sure that the speaker's experience is small. For safety's sake, it seems wise to qualify statements so as to leave a loophole for escape. We

might just as well be modest and own that our knowledge of wild animals and their ways is exceedingly limited; the more we study them, the more are we convinced of this, unless we are blinded by conceit and preconceived notions as to what the animals should do. The man who said that the black rhinoceros of East Africa is usually found singly or in pairs and that more than three *never* go together (I have seen five in a herd) is an example of the man who does not know quite as much as he would wish to have people believe. It is in every way better to state simply what one has seen (using one's eyes very carefully), instead of laying down the law and saying that such a thing always happens because we have seen it occur on one occasion.

Having followed the caribou past Sandy River on their way south, let us see what became of them. A glance at the map shows their distribution over the interior of the island south of the railroad. This is a region of high hills and deep valleys, open country and dense forests, rocks and marshes, rivers and lakes—in fact, a country of infinite diversity, yet all suited to the needs of the caribou. The herd would keep moving slowly from one feeding-ground to another, restless at all times, for the caribou is probably the most truly nomadic of all the deer; his food is slow to grow, so he must not denude his pastures, though this would seem to be impossible, owing to the abundance of the



A magnificent Caribou Stag, with a forty-five point head. Unfortunately the position does not show the animal to advantage.

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different mosses which furnish the necessary nourishment. But whether this is the cause of his restlessness, I cannot say; there must be some reason for his roving habits.

Unfortunately, I have never visited Newfoundland during the winter months, and so all I write about this season is only the result of conversation with the trappers and guides. They told me that the caribou were found in herds numbering anywhere from half a dozen animals to several hundred, the larger herds were found most often during the severe winter storms, when the snow lay deep on the ground for weeks in succession. Unlike the moose, which 'yards', the caribou, so far as I could learn, kept more or less on the move, going from one valley to another in their everlasting search for food. In this way the winter was passed, and as the snow melted they began the northward journey, not in concerted action or in large herds, but slowly in straggling twos and threes. They did not appear to have been in any hurry, for there was no dread of being caught by winter's awful storms. The does, heavy in fawn, were anxious to reach their summer homes where they might bring forth their young in a region of plenty, above the flat lands where floods might have injured the fawns; and so, during the months of April and May, slowly travelling caribou may have been seen repassing on the leads over which they had hurried in the autumn.

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No longer was the stag a mighty, overpowering beast with spreading horns, or a spent creature following patiently the lead of the does. No longer had he the smooth, new, heavy coat of dazzling white and grey. He was a different creature. He was quiet and hornless, his light-coloured coat was rough and shaggy; the long hair which had kept him warm during the bitter cold was no longer needed, and bit by bit it would fall to make room for the thin summer dress. The does were in much the same condition, except that some were still carrying their small horns. They did not keep with the stags, but preferred either the company of their own sex or a solitary life. Whether or not the fawns of the previous year returned north with their mothers I have never been able to ascertain. It is probable, however, that they did so, and were separated immediately before the young were born. The object of the northern or return migration has never been discovered, and we are still in the dark regarding both its object and its cause and now it is doubtful if we shall ever know. We will therefore leave the subject of migration, after having watched the strange animals follow the example of their ancient ancestors, watched them treading, for the last time perhaps, in the footsteps of millions that had gone before. With slight change in their appearance we have seen them cross the same barrens and swim the same rivers just as they might have done countless ages

before man walked the earth and became their enemy, once for the necessity of food and then for sport.

Who would have thought that practically all these magnificent animals would so soon be but a memory? And yet this was evidently in my mind, as will be seen from the finishing paragraph in the chapter which I wrote in 1913. It is sadly prophetic: "If present indications may be relied on we may hope that the same paths will continue to be used for very many years to come; yet with the rapid changes of modern times, it is not safe to predict the future of any animal. The day may come when the migration will be a thing of the past sooner than we believe possible, and we shall have nothing to show that it ever existed except the paths cut in the weathered rocks, and the modern recorder of facts—the photograph."

Chapter V

The North American Porcupine

AN ACCOUNT OF HOW SOME WERE PHOTOGRAPHED AND
SOME WERE NOT

WHEN Nature in her wisdom designed the various forms of animals she allowed her fertile imagination to run riot every once in a while, with the result that the world is populated with a strange assortment of surviving forms, some grotesque, some merely ponderous and some graceful. Yet apparently each one fits its own place in the order of things. We think of the prehistoric days and feel that living creatures of those far-away periods were stranger than anything existing in our own time, but this is scarcely true. What, for example, can be stranger than the elephant with its greatly developed proboscis or trunk, or the giraffe with its over-developed neck; the rhino with his fearsome appearance and in the African form the curiously placed pair of fibrous horns; the hippopotamus with its monstrous mouth and unduly short legs? The past ages gave us nothing stranger than these animal giants. In point of colour and markings we have the tiger beautifully striped with black over orange; the

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leopard with its pattern of black footprint-like forms on the richly toned ground of dark yellow and white; the zebra and others, each marked in a way that distinguishes it from other species and for a reason which no man has yet discovered. Some animals are built for speed, probably as a means of protection against their enemies, others rely on various developments such as horns, antlers or tusks, as in the buffalo, deer and pigs, and others, such as the skunk, on powerful controllable scent secretion; while still others again, like the armadillo, depend on a veritable coat of armour in the form of horny plates. But few animals are stranger than the porcupine with its coat of sharply pointed quills which form such an effective protection against most of its enemies. In England we think of these curious animals as belonging only to Africa, and in America the average person believes them to be purely a home product. The African species is by far the larger and has the very long black and white quills which we may see used as penholders and fishing floats. The American variety is smaller and has short straight quills, and it is of this animal that I shall deal, not that I have any special affection for it, but because I once had some rather amusing experiences in connection with photographing it in its native haunts.

It happened in this way: Some years ago, when animal photography was an entirely new art and when

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the value of truthful camera pictures began to be appreciated as a useful contrast to drawings, which only too frequently were far from accurate, I was commissioned to make a series of illustrations for a story about American procupines. At that time I had never seen one of the animals except in a zoo and I knew nothing about them or their peculiarities, nor even where they might be found. But being of an enthusiastic nature and being also an optimist, I accepted the commission even with the handicap of a very short time limit. Three or four weeks, I think, was the allowance.

By chance I happened to be in Washington and while there I called on my friend, Dr. Merriam, the eminent zoologist, and telling him of my predicament, asked where he would advise my going. He laughed heartily when I explained what I had to do, for he knew the porcupine and consequently what I was up against. That I should complete the task within the allotted time he did not believe possible, but, what was of greater value to me, he gave the name of a place in the Adirondack Mountains (north of New York), where he said the animals were fairly numerous. So I packed up and started on my strange quest, and eventually, after a train journey and a long drive over, or in, I should say, thawing roads, arrived at a small but comfortable farm-house and arranged to make that my headquarters and get the help of the farmer and his son.

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They also, like Dr. Merriam, were greatly amused on hearing what I proposed doing, particularly when I asked them to pose for some of the pictures in conjunction with the animals. The publishers insisted that the various incidents in the story should be illustrated with convincing accuracy. In other words, the farmer and his son were to take the parts of the characters. The next thing necessary was to secure a porcupine and take it to a place where there was still some snow remaining. The weather was becoming warm, so there was no time to lose, as in a few days all sign of winter would have vanished. The farmer was a resourceful fellow and he set some bait outside the barn. Scarcely had darkness settled on the land than we heard the sound of gnawing. Armed with a lantern, a stick and a sack, we went forth and true enough there was the 'Porky'. Having found the animal, the question was what was the next move. In other words, how was he to be secured? As we stood round the quilly creature he lashed his heavy tail from side to side as though daring any of us to come near. It was suggested that we should get him into the sack and place the sack in a box and hope for the best. After a good deal of trouble this was accomplished, and we returned to the house.

Early the following morning we started away to 'shoot' the first scene, a camp in the snow with a porcupine feeding on bacon rinds. Our model, still in

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the sack, was carried slung on a pole and I noted that the sack bore a marked resemblance to a pin-cushion. The significance of this, however, did not strike me at the time; in fact, not until after everything had been arranged for the picture and we opened the bag to see a completely quillless creature emerge. All the quills were sticking through the sack and the animal was useless from my point of view. There was nothing to do but start a hunt for another model, but though we searched diligently, no sign of another porcupine could be found, not even in the many hollow logs which are frequently selected as sleeping-places during the hours of daylight. We were defeated and returned to the farm wiser and sadder men. Our valuable time had been wasted. The springlike feeling in the air warned us that the remaining snow would not last much longer, and the prospects of rain only added to the danger of further delay. A few hours of warm rain and all sign of snow would vanish.

Sacks having proved quite undesirable as holders of the quill-coated animals, we decided to make a wooden enclosure strong enough to hold any that we might secure and then carry them or one of them, fastened by the legs, to the snow patch. Late that night we made a tour around the outbuildings of the farm and before long discovered two of our friends prowling about in searching for what they might devour; spade or axe handles or, in fact, anything

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that has been in contact with human hands is considered suitable food, for these animals have strange tastes and seem to prefer salt in any form to almost any kind of food, and man-handled wood does, apparently, absorb a certain amount of salt. It is this peculiarity of the porcupine that has led to his complete lack of popularity, for nothing is safe from his sharp teeth and unnatural tastes. All wooden implements have to be most carefully hidden or their destruction is inevitable, and as the little rascals, in spite of their clumsy appearance, can climb even the more inaccessible places, hiding objects from them is a matter requiring a considerable degree of ingenuity.

After we had found our two porkies, the next thing to do was to persuade them to enter the enclosure so carefully prepared for their reception. Trying to induce these unhandleable creatures to go where you wish them to go and to where they, by the natural perverseness of things, do *not* want to go, is like trying to steer mules, donkeys and other obstinate forms of animal life against their will, except that the suggested sign of 'hands off' is indicated most convincingly by the unpleasantly numerous sharply-pointed quills.

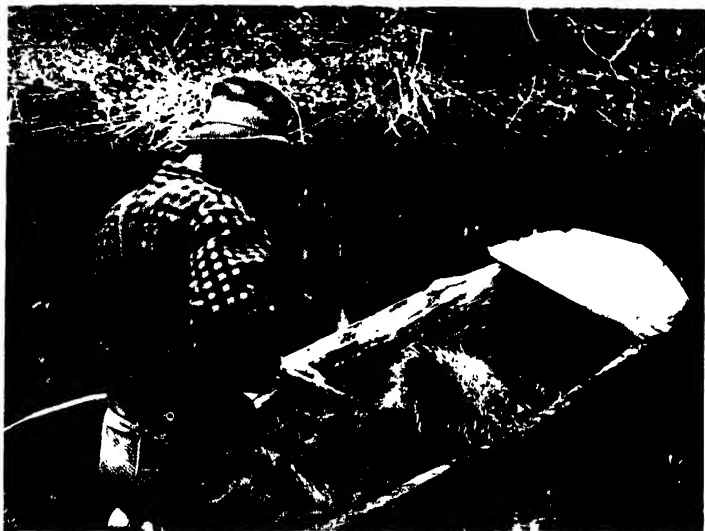
For an hour or so anyone happening to be in our vicinity would have been amused at the sight of two men, two boys and an assortment of dogs of unknown pedigree striving valiantly, in the dim light of a couple of smoky lanterns, to urge, coax, persuade, induce or

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otherwise influence the troublesome little beasts to enter the perfectly good temporary residence. In the end our efforts produced the desired result and our models were safely housed with the loss of only a few dozen quills, which they had very inconsiderately transferred from their natural positions to various parts of our anatomy and to the noses of the ambitious but somewhat reckless dogs. An hour of carefully applied surgical skill saw the last of these barbed weapons extracted and we turned in, to dream of next day's work.

After an early breakfast we tackled the difficult problem of securing one of our friends by all four legs, and it was no easy task, but eventually by means of a noose attached to the end of a stick we did the trick, and off we started, a very strange procession, the man and the boy carrying between them a stout pole from which was suspended the astonished porcupine, while I was armed with the photographic equipment.

In order to reach our snow patch we had to cross a river and the river was very full and in a quite unnecessary hurry to leave the Adirondacks; a totally inadequate punt was our only means of crossing this rushing torrent. I decided that it would be wiser, owing to the very diminutive size of the craft, to let the man take the 'porky' and the boy over first and I would follow on the next trip with the cameras, as it was not advisable that they should get wet. Now it



The Porcupine proves an Unwelcome Fellow-Passenger.



Porcupine sitting on a Branch, watching the Author and wondering what is going to happen.

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appeared that the quill-coated animal was not accustomed to life on the bounding wave and began to get decidedly restless, with the result that before long he had freed his feet from the cords and, having thus obtained his comparative independence, proceeded to make the most of it by heading straight for the man whom he considered to blame for his present humiliating predicament, a predicament which was not improved by the water dashing over the side of the boat and soaking the wretched creature. The man's whole attention was, of course, devoted to handling the frail craft and in vain did he try to push the 'porky' away, for these animals cannot, even with the greatest stretch of imagination, be considered desirable companions. Shoving the little and very determined beast back with his boots proved somewhat unsatisfactory as it resulted in the boots looking like pin-cushions, so the man, taking the paddle from the water, pushed the animal back with it, with results that were very nearly disastrous, as the boat, no longer controlled, swung sideways to the current and the yellow wavelets dashed over the low gunwale and threatened to fill the punt and give its occupants a free bath. Only quick action on the man's part saved the situation, and a few minutes later a landing was made and I had the pleasure of watching the efforts made to secure the thoroughly drenched and very irritable 'porky' who had been the cause of the trouble.

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The rest of that morning we worked hard to secure the necessary photographs and I came to the conclusion that any man, woman or child who undertook to use porcupines as models for pictures was an altogether complete fool and deserved to endure the test of patience and annoyance that nearly drove me mad during those few hours of hurried effort. Rain looming in the very near future made it necessary to get the work done without delay, while against this the wretched animal, whose supply of quills was steadily decreasing, fought every idea that I tried to execute as though hoping, by fighting this delaying action, to prevent my succeeding before the rain came to wash away the snow. However, I got what I wanted, more or less, but my model had been so dequilled that he was of no further use to me, and I let him go to grow a new coat of armour and cause as much more trouble in the world as he wished. My other model was awaiting his call to pose and I planned and found the next settings, and then in a drizzling rain returned to the farm to discover an empty enclosure which should have contained a ready-to-use porcupine. The little rascal had eaten his way out, notwithstanding what we had considered to be most careful precautions for his safe incarceration. As it happened, this misfortune was not as bad as it seemed, because for the next few days it rained almost perpetually and no photographic work was possible.

News seemed to have been circulated among the

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porcupine population that the neighbourhood was becoming dangerous, and though we tried every method of finding some more models we had no luck, and the farmer advised our going to a place some fifteen miles away where, he assured me, we should find all we wanted. As soon as the weather became settled, we three started, each carrying a full load of blankets, food and camera equipment. Our way led through rough trails into the wild spruce and hemlock forests, with here and there a hard-wood ridge of magnificent beeches and birches. Spring had come with a rush following the rains and the country was at its best; the lace-like green of the young leaves and the carpet of early flowers raising their blossoms from the rich green mosses was all very beautiful, and everywhere the newly arrived migratory birds could be seen and heard. So also were those pests of the northern woods, the black flies and mosquitoes, both seen, heard and distinctly felt. They were remarkably hungry and persistent and added nothing to our pleasure.

It was early in the afternoon when we reached our destination on the shore of a small lake. A temporary camp was soon made, with a fair-sized birch-bark lean-to. We had not brought tents, as our loads were sufficiently heavy without such fancy articles, and bark was easily peeled at this time of the year. For food we relied chiefly on trout, bacon, flour and baking powder. One lives on simple fare in the woods, for

hunger is a good sauce. It may be thought that we were optimists to have counted on trout, but in the early spring the fish in those lakes are not fastidious. They will take almost any fly and take it without argument, so it required but a short time to land enough for a meal, and what a good meal that was. We were hungry after our uphill walk and breakfast was but a memory, and the bacon and fresh trout vanished with incredible speed. I often wonder what there is about food eaten under such conditions that is so utterly different to a meal served under the highest degree of refinement in a house. Even the tinge of wood smoke seems to add a touch of flavour that is delicious, and no one objects to a few ashes or bits of burnt wood or other items not mentioned on the bill of fare. Having done ample justice to our simple meal we rolled ourselves in our blankets, for the chill of evening was upon us, and as we watched the sparks from the liberal log fire dancing their way skyward we listened attentively for porcupines. As though ashamed of their personal appearance they usually avoid moving about much during daylight, but prefer to wait until dusk before starting out in search of food. They have a remarkably keen sense of smell and are always attracted by a camp, for a camp means bacon rind and other morsels to tickle their palate.

The crackling of the fire made us so drowsy that it was by no means easy to fight against sleep, but

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suddenly we were stirred to activity by the curious shrill calls that proclaimed the arrival of our friends, and the sounds coming from different directions showed that there were several within a short distance of our camp. We rolled out of the warm blankets, slipped on our boots, lighted the birch-bark torch that had been prepared and started out into the tangled forest that seemed so bewilderingly dark. The sound of our moving through the fallen branches and upturned roots with which the rough ground was strewn, gave warning of our approach, and every porcupine became silent, but after a careful search we at last discovered one only a few feet away. The light of the torch gleamed red on the shining quills of the astonished creature, who remained motionless for a few moments and then, as though not approving of our appearance, he made off as fast as his short legs would allow, and it is surprising how fast they can move and how seldom they go in one direction for more than a few yards. The straight and narrow road is not for them, but rather a confusing zigzagging course, which is anything but easy to follow, especially in the dark.

We made after the rapidly moving animal as fast as conditions would allow and those conditions were entirely against speed. In our haste we tumbled over fallen logs, got our feet entangled in roots, fell into muddy holes, barked our shins against stumps and altogether made an amusing picture more or less

lighted by the blazing and wobbling torches, which cast fantastic shadows that seemed to dance in all directions as though laughing at our apparently hopeless efforts. Several times, when we came to close quarters with our aggravating quarry, he would turn and rush between us and we dared not stop him for fear of being struck by his strong quill-filled tail. In the end, however, perseverance won and we cornered him at the roots of a large cedar. Holding him with a forked stick, we succeeded in getting a stout cord tied to his hind foot and started campward, at least that is what we fondly believed we were doing as we drove, pushed and urged the contrary creature along the uneven ground. In our excitement none of us had kept any track of our direction, we had simply followed where the animal led. The woods were thick and one part much like another. For nearly an hour we floundered first one way and then another, but still there was no sign of the lost camp. We cut fresh birch bark and made new torches which would light up our immediate vicinity, but without result. The camp had vanished as completely as though it had never existed. Foolishly, we had not replenished the fire before leaving and we realized what a mistake that had been. Added to our troubles our prisoner escaped twice and was only caught again with difficulty. Altogether we were having a thoroughly delightful time, and as I mopped the perspiration from my face I regis-

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tered a vow that I would never again undertake to photograph the prickly porcupine, in the home of his own choice.

We became tired and discouraged and it seemed as though the only course open to us was to remain where we were, wherever that might be, and wait until daylight came to our relief. We were discussing the question without any undue enthusiasm, when to our surprise a glittering shower of sparks rose out of the darkness not more than twenty yards away. For a moment we were speechless, then turning to one another we burst out laughing, for there we were almost on top of our camp without knowing it.

The joke would have been even better, or worse, according to how one felt about it, if we had stayed out there in the cold for the whole night while our blankets were so near.

There was, however, another little joke awaiting us, for as we came to the camp we saw a fine big porcupine moving slowly away, and we had spent hours getting the one that we now held captive. A lot of good energy had been completely wasted. A further investigation disclosed the sad fact that our visitor had been helping himself very freely to our bacon, which he had taken out of its covering. We quickly decided that he must be made to pay for such impertinence, so fastening our captive in a temporary way to a stump, we rushed after the thief and finally caught him, and

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a fine fellow he was, large and with a good coat of quills, just the sort of model I wanted. Now that we had two it simply remained for us to secure them both in some safe way and return to our interrupted sleep. But, and there is always a 'but' or an 'if' connected with animal photography, our two dwindled suddenly to one, for while we had been engaged in catching our bacon stealer, Number One had taken advantage of the opportunity to prove that his fastening had been only temporary. In other words, he had departed hence to destination unknown to us, at least for the moment unknown.

This was evidently a night of incidents and we could but smile at the way things were going, and porcupines too. The one thing we were certain of was that our one and only model should not get away, so we put wire nooses on each of its four legs. Having finished this job, we realized that we were all very tired and that sleep was about the only thing that would interest us. We were too tired even to make up the fire and each one made for his blankets.

Scarcely a second later there was a very sudden exclamation beginning with the letter D and it came from the man. Other remarks followed in rapid and violent succession. I quickly lit a match and by its flickering light saw a most comical scene, at least *I* thought it comical, for there was the man gazing intently and with much anger in his eyes, at his hand,

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which was filled with porcupine quills. Quickly getting a blaze out of the fire I saw what had happened. Our Number One Porky, having broken loose from his temporary fastenings, had made straight for the lean-to and there found some nice warm blankets which made an instant appeal to his idea of comfort, so he had made himself very much at home and was apparently sleeping peacefully when the man, also desiring to sleep, had crawled in, and in arranging the bedding had put his hand on to the animal with truly disastrous results to that same hand, and the use of a large amount of abusive language, quite pardonable under the circumstances it must be admitted. Quick action was necessary and while the boy did his best to secure the intruder I employed my limited skill in extracting the numerous quills from the man's hand. It was, for him, a painful operation, but was finally accomplished, and once more we turned in and were soon lost in our much-needed sleep. We had had a trying and very fatiguing night and before long daylight would come and with it plenty of hard work.

The first task selected for the day was a scene on the edge of the lake. In order to obtain the desired composition it was necessary that I should stand in the water some six or eight yards from the shore. The water was nearly up to my waist and was bitterly cold, the ground soft and boggy and to add to my troubles the whole insect world seemed to be out and about,

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enjoying the spring sunshine and the blood of the stranger; black flies and tiny midges swarmed about my face and hands, attacking every part of my exposed anatomy with strict impartiality and utter disregard for my feelings; blood streamed down my face and neck and once more I cursed my foolishness in attempting this task, as I struggled to keep my temper and concentrate on the work. Of course the porcupines behaved badly, and having to use two for this picture made much more than double the amount of trouble. How many times those wretched creatures tumbled into the water when they were supposed to be standing on a log I have no idea, but after endless efforts I secured photographs of them in exactly the poses described in the story.

I felt like two people as I made for the shore, the lower half nearly frozen, the upper half heated to fever-point by the insect bites. The fact that I had succeeded scarcely recompensed me for all that I had suffered. One surprising fact I discovered was that a porcupine was seldom good for more than one picture. By moving them to the right places and thwarting their attempts to go to wrong places they suffered a serious loss of quills, many of which found their way into us.

It might be well to mention here that the common belief that porcupine 'shoot' their quills at any enemy is, like so many stories of the ways and habits of animals,



One of the Scenes in the Story required two Porcupines and a Boy.

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without foundation. People have told me in perfectly good faith that they have actually *seen* it happen, and still I maintain that it is a fairy-tale, a result of someone's over-fertile imagination having first started it, and as usual the fable has continued to thrive. What happens is that the animal lashes his fairly short and powerful tail from side to side with such force that the quills are driven into any substance with which they come in contact. Occasionally a loosened quill may be thrown out even to some distance, but that is only a chance. None of the quills appear to be very firmly attached to the animal. The slightest contact brings them out. Consequently in trying to place our models where we wished they had to be pushed to some extent and the result, as already stated, was that the animal soon lost his characteristic appearance and became useless for pictures. This in turn meant that a constant supply was necessary, and anybody who has ever gone out with the deliberate intention of finding these animals, whose habits are almost entirely nocturnal, knows how hard it is to discover them when they are having their daily sleep. If they remain motionless, as they usually do, they are difficult to see, and it is only when the back quills are thrown upwards and show their whitened points that they are conspicuous. They select a great variety of hiding-places, holes under roots of trees, hollow logs, cavities in moss-covered banks, under the flooring of old logging huts and

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such convenient situations are most commonly used; but strangely enough they frequently spend the day high up in a tree, sitting on a branch close to the trunk. We found one in such a position and thought it would be an easy matter to secure him by cutting down the tree, which was a tall spruce. With the first stroke of the axe the little fellow decided to move upward till he reached the topmost branches. The object of this manœuvre we could not understand until as the tree began to fall and brushed against another one we saw the porcupine, with surprising agility, scramble from the moving tree on to the standing one. Our labour had been in vain. Not to be outdone, we started cutting the second tree, but with exactly the same result. As this might go on indefinitely, for the forest, according to the ways of forests, was full of trees, we were forced to abandon the strange chase and bow to the little creature's remarkable cleverness. To look at them you would scarcely believe they had sufficient intelligence to think of such a method of outwitting man's efforts.

The more one comes in contact with both animals and birds the more one realizes how quick they are to make and execute plans for their protection. In other words, they have far more intelligence than most people give them credit for possessing. It is all very well for us to say that it is all a question of instinct, but there is without doubt a great amount of free and

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independent thinking entirely apart from what may be called inherited knowledge, commonly known as instinct. I have devoted a large part of the last thirty or forty years to the study of animals and I am still confused in my ideas on this much-debated subject, at least I should say confused in my attempts to define the difference between instinct and reason. The one point about which I disagree with so many people is that of attributing all that man does to reason and all that animals and birds do to instinct. Within certain, or perhaps it would be better to say, uncertain or undefined limits, what we call these lower forms of life do a great deal of reasoning and thinking and obviously arrive at conclusions by a process very similar to our own.

The porcupine which we tried to secure was not a particularly highly developed animal and yet he reasoned out the problem of the falling tree in a perfectly logical way. To have come down when the tree was being cut would have placed himself in our hands and that at all costs must be avoided. To have remained on the branch until the tree crashed to earth would be obviously dangerous. To reach another tree which was not being felled was only possible by waiting until the one he was on and which he realized was going to fall should brush against its nearest neighbour. The rapid move from one to the other showed an alertness of both mind and body which was surprising. To have

done this once might be regarded by those who would wish to belittle the animal's intelligence as an accident or chance, but when it was repeated there could be no doubt that it was an act of logical and deliberate reasoning. The only part that instinct played was that of the natural desire for self-preservation.

The general attitude of man towards the porcupine is that they should be killed whenever and wherever they are found, largely because of their destructive habits, and even their best friends are forced to acknowledge that they are destructive. Nothing that has been handled by man is safe from their teeth. Many a traveller in the Northern Woods has had reason to curse them, not only on account of their depredations of food supplies in the camp, but for their annoying habit of gnawing canoes and paddles. Farms in the vicinity of forest lands are also subject to their evil propensities and yet they serve one useful purpose so far as man is concerned. Anyone lost in the forests can always secure a meal, even though unarmed, because porcupines may be killed by the simple process of striking them on the base of the nose. That is their vulnerable part. The meat when roasted is, I am told, quite palatable, somewhat resembling that of a young pig. For this reason there is a feeling against their unnecessary destruction in certain parts of the country, away from the vicinity of human habitations.



As a climber the American Porcupine is an adept.

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It is scarcely necessary to weary the reader with further details connected with my efforts to secure accurate photographic illustrations of these strangely untouchable animals. The foregoing account tells enough to show that my troubles were numerous, difficult to overcome and at times had a humorous side to them, more humorous on looking back at them than at the time. It is often easier to enjoy a good laugh after something has happened than while we are undergoing the experience. I confess frankly that the best part of that trip to the Adirondacks was the packing up, for I had the satisfaction of knowing that I had succeeded where failure had been predicted and, further, that I was well within my time limit. Two days ahead of the appointed date I walked into the publishers' office and handed in the photographs all complete, and each one illustrated faithfully some particular and interesting point in the story. So far as I know, wild animals had never been used before in this way, and though, as a novelty, it was probably worth the effort and expense, yet I believe that a good set of drawings would have been more effective even though, perhaps, less convincing. These photographs certainly gave the story a touch of realism, and the Editor was so pleased that he actually gave me a cheque for half again as much as he had promised. This may not be a record, but it was a most unusual act of generosity which I fully appreciated, and it helped me to forget the flies

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and the perverseness of the porcupines, and remember only the glories of the forest during those spring days when everything in nature was so beautiful and full of hope and life.

Chapter VI

Peculiarities of the American Opossum

IN the previous chapter I gave a description of some of my experiences, painful or amusing according to the point of view, in connection with trying to make a wild animal pose for certain definitely required photographs. My difficulties were numerous, very numerous I might say, because if there was any position called for by the text of the story I was trying to illustrate, that was the one position which the animal decided *not* to assume. He, or rather they, seemed to know intuitively what I wanted, and, according to the natural contrariness of small beasts, that was to be avoided at all costs.

Unfortunately I was dealing with porcupines, and porcupines are designed by Nature so that they may not be handled. Their coat of sharply pointed quills is their only protection, and a fairly effective one it is too, as I found out by painful contact. In that case I had a story which had to be illustrated faithfully.

Some years later it fell to my lot to have to reverse the order of procedure. I made a series of photographs of that strange creature the American opossum, or rather of a pair of them, and when I showed the pictures

to an editor he became greatly interested and insisted that I should, there and then, write a story which would bring in every photograph. So, accordingly, I took my pen in hand and did as I was requested. The result of my efforts, when published, puzzled some of my readers. They were, in fact, filled with 'satiabie curiosity', like Kipling's elephant child, and demanded an explanation as to how I had managed to make the 'possums do *exactly* what the story described. With absurd honesty I explained that the story had been written to fit the pictures, instead of the pictures being made to fit the story. And this I may say, without fear of contradiction, is by far the best method of producing photographic illustration of animals in their wild state.

The American opossum is a strange animal, strange in more ways than one. First of all he is a marsupial. That is to say he, or rather she, is possessed of a patent pouch in which the young are carried. This is necessary because the little ones, when born, are only partly developed and consequently very helpless. So mother keeps them in the warm, self-closing pocket until they become sufficiently mature to go out in the open air. The kangaroo follows the same interesting fashion. The next peculiarity of the American 'possum is his very curious idea of self-protection. The ostrich is supposed to bury his head in the sand and fondly believe himself invisible to whatever enemies may be lurking about. Why this is done, or said to be done (my

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doubt is only due to the fact that I have never seen it happen, though I have watched the great birds many times, and under various conditions), passes my understanding, because with their extraordinary speed they can usually escape their pursuers and if cornered can put up a very hard fight.

Now the 'possum has no means of eluding his enemies. He is slow on his feet and his bite is not serious, so in the presence of danger he anticipates his end by pretending to be dead, and he does it so convincingly that, occasionally, he actually succeeds in the bluff and gets away. He does not even wait to be hit as a rule, but, when cornered, simply rolls over and becomes to all appearances completely and altogether dead. Knocking him about produces absolutely no effect, he is only a floppy piece of lifelessness. Hence the truthfulness of the expression 'Playing 'possum', and those who know the animal take no chances, they kill him when he is 'dead', strange as it may sound.

As an article of food he is in much demand in certain parts of the country, chiefly in the Southern States, but usually it is only the 'coloured' people who regard the meat as a delicacy. I have been told that it is much like young pig, though whether this is true I cannot tell, never having partaken of it.

In appearance, as may be seen by the accompanying illustrations, the 'possum is not much like any other animal, and is quite different from his Australian

namesake. The face is creamy or greyish white, with a rather sharply pointed nose and small eyes. The body is clothed in coarse hair, white tipped, and soft light-coloured fur, the whole effect being a warm silvery grey. The legs are short and the tail long, bare and prehensile, so that the owner can hang by it, even from a small twig. In habits they are more or less nocturnal, seldom venturing forth during the day, unless it happens to be unusually dark. Their home is, as a rule, in a hole in a tree, for they can climb with ease in spite of their somewhat clumsy appearance, or in a hollow log. Sometimes they become imbued with a taste for luxury and comfort and make cosy nests of grass and feathers and other soft material. Their unfortunate weakness for poultry often leads them into danger, with sad results, because if they happen to find their way into a chicken house, the frightened birds give the alarm and the farmer does the rest. Chickens, however, are not the only form of food, they eat almost anything and are particularly fond of fruit. In former times the skins were of little value—I have seen them sold for as low as five cents (twopence halfpenny)—but nowadays they command a good price, for the furrier's art converts them into all sorts of fancy-named furs such as 'mink opossum', 'sable, or martin opossum'. It is, in fact, a wise animal that knows his own pelt. (The hair of the American variety is straight while that of the Australian is soft and curly.) Now



“In his excitement and haste 'Possum One selected a tree so small that it afforded him no hiding-place.”

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that the wretched animal is hunted so relentlessly for its skin it is strange that they are not exterminated. They are, however, far less abundant than they were twenty or thirty years ago.

This brief summary will make the following story, written to fit the set of photographs, more understandable, for I endeavoured to bring out, so far as I was able, the characteristics of the little animals. It was originally published in *Country Life in America*, between twenty and thirty years ago, and was entitled "Two 'possums and several mistakes". If there is a moral to the story it is this: that it does not pay to break away from habits which have been formed as the result of years of experience, inherited or otherwise. Good luck alone, in the form of a man's lack of knowledge, prevented a tragedy in the lives of these two little creatures.

Two 'possums each made mistakes, with the result that they both got themselves into many kinds of trouble with almost tragic consequences.

As we know, 'possums, like owls, usually travel only by the moon, the stars, or by no light at all. When all the world is hushed in sleep, hen-roosts are much easier to rob, for except the cackling of a hen—and even that should not happen if the job is neatly done—there need be no noise or fuss of any kind. Even the watch-dog, keen-eared as he is, may sleep on, oblivious of all that the 'possums are doing within his precinct.

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But, as already stated, the two 'possums with which we are dealing made mistakes, and the first of these mistakes was neither more nor less than that they came out by daylight. The day was dull and grey, it is true, but none the less it was day, and therefore not the time for well-regulated 'possums to be out.

'Possum One (as we will call him), who had selected a temporary home in a drain-pipe only the night before (chiefly because it was adjacent to a well-stocked hen-house), had been disturbed, because some thoughtless man had turned a flood of water into his pipe home and had given him a most unwelcome bath, and baths, it might be added, are not in favour with animals of this particular species. So he determined, force of circumstances urging the determination, to make for a certain large gum tree, whose branches overhung the muddy waters of a river. In this tree was his regular nest. A comfortable one it was too—quantities of dry leaves, placed in a hole in the trunk about ten feet from the ground. The hole, as all properly considered holes should be, faced towards the south, so that when the sun shone he had the benefit of its warmth. Curled up in this nest, covered with leaves, some muskrat fur and chicken feathers (Whence came those tell-tale feathers, Mr. 'Possum?), he had spent many months. When all around him was wrapped in a winter's spotless white winding sheet, the snow had piled up over the entrance of his home, but the warmth of his body

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had melted most of it away and left his doorway clear.

Now it was autumn, late November, and all was cold and dreary. The leaves, with which the ground was thickly strewn, rustled loudly as the short-legged animal shuffled along towards his particular gum tree. On arriving there he stopped, for a suspicious odour greeted his sensitive nostrils, and the odour was unmistakable proof that, but recently, another one of his own kind had been there. The invisible trail led up the tree. Worse and worse. Bad enough to have anyone come to his tree, but to climb up, as this intruder had so evidently done, looked suspiciously as though the stranger had pre-empted his own home. This of course is altogether contrary to the laws of the wild creatures. Each one's home belongs to him and to no one else. Almost the only exceptions to this are the parasitic birds, such as the European cuckoo and the American cow bird; these, as is well known, lay their eggs in the nests of other birds, for some reason which has not yet been explained with any degree of satisfaction. But animals, so far as I know, are unanimous in having the Britisher's idea that their home is their castle, and woe betide him who violates its privacy. Consequently our little friend was seriously perturbed.

Then came the question: what could he do if this stranger happened to be larger and stronger than he was? Would he have to relinquish possession of his

home, and that, too, without a struggle because, of course, might becomes right even in the animal world? Or should he try to coax him out, under some pretext or other? Better first investigate. Things might not be as bad as his agitated mind imagined. So, after devoting some moments to the question of ways and means, he proceeded to climb up the tree, and he climbed with an astonishing lack of haste and enthusiasm. Up, and still further up he went, after the slow, clumsy method of his kind, until at last he reached his elevated threshold, and then—well, he suddenly slid down again, just a few feet, and all because a long-pointed nose protruded from the nest of leaves and feathers, and the nose was followed in turn by an open, well-toothed mouth and a quite unnecessary amount of ill-natured conversation, of that quiet guttural sort of snarling so characteristic of a disturbed or annoyed 'possum. Some people go so far as to believe that they like to snarl, that they are cursed with a bad disposition and feel that they have a chronic grievance against the world in general and against anything that comes near them in particular; whether there is any foundation for such a belief it is impossible to say, and anyhow it has nothing to do with this story. The one thing that was quite evident was that 'Possum One decided there and then that he did not care to risk an encounter with anyone of his own species who happened to be so much larger than himself, and so

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ill-tempered and bad mannered too. It was better to wait a short time, just to let his unamiable and thoroughly unwelcome tenant see that he was not afraid. Oh dear, no! Never even thought of such a thing. Might *was* right, and all his ideas of the sanctity of his home suffered a sudden and complete collapse.

The whole situation called for careful consideration, and clinging to a tree trunk was no place for clear thinking. The constant snarling and the gleaming white teeth convinced him of that. An ignominious retreat was in order, and he made his way with considerable speed down to the ground. It was safer there.

Looking the picture of utter dejection he sat down and thought things over. Strategy was called for, and after several minutes he decided that it would be best not to show the animosity with which he was consumed, but pretend to be filled with nothing but a great amount of friendly feeling. So once more, in fear and trepidation, hidden of course, he climbed the tree, but this time he went up on the opposite side to where the hole was and continued until he was a couple of feet above it. That gave him a sensation of greater confidence as he had the upper position and could look down on his erstwhile enemy. Then, to show how kindly were his intentions, he invited 'Possum Two to go with him to pay a visit to a certain hen-house that he knew. It was only a short distance away, and as

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it was late in the afternoon and the day was overcast he felt reasonably sure that the chickens would be home, and even if they were not, they could easily hide and wait until they did return. There would even be an advantage in this waiting plan, because there was the possible chance that, once the poultry were safely inside, the farmer might close the entrance against all prowling visitors.

The sceptical reader will say 'rot', 'rubbish' or some such unpleasant expression of disbelief. Animals do not hold conversations. Of course not, at least not in the way that people do; but nevertheless they have a very definite means of inter-communication, though what it is we do not know; some people doubt even that it exists, and yet it is demonstrated before our very eyes. Take, for example, a couple of dogs, dogs that are carefully looked after and not allowed to roam about at will but are supposed to take their regular exercise with their master or mistress. They may have a strong inclination to do a little hunting on their own, stolen pleasures being always the sweetest, and this is how they will manage to elude the vigilance of whoever takes care of them. They may be both, apparently, sleeping on the floor. One gets up and in a casual sort of way drifts over to the other, puts his head down, as though whispering something in his ear, and then wanders slowly about until an opportunity offers for him to leave the room. The other

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dog in the meanwhile slumbers on, as though absolutely unconscious that any plan has been made in which he is to take a part; oh no, he is much too clever for that. Too well does he know that if they both left the room together, or attempted to do so, they would be stopped. By going singly, with a reasonable time elapsing between their departures, their scheme has a good chance of success, and so after perhaps five or ten minutes the sleeping dog wakes, yawns, stretches himself and in a very unostentatious way makes his exit. He has apparently nothing on his mind, but is just roving about. *But* no sooner has he got clear of the room than his manner changes, and he rushes out to find his companion and together they go to hunt and enjoy themselves. The whole thing is so deliberately done that there can be little doubt that the plan was arranged during the brief moment when the one came over and talked to the other. If domesticated animals, with their less highly developed keenness, due, of course, to their sheltered lives, can communicate with one another, how much more reasonable is it to presume that wild animals can do so to a still greater degree. Anyhow 'Possum One made friends with 'Possum Two and gave him to understand that there was an expedition to be undertaken which promised to produce an ample feast of such delectable morsels as chickens.

The two little creatures came down the tree and 'Possum One led the way, with the other following

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a few yards behind. Up a narrow lane they went, keeping a careful look-out for possible enemies. It was risky going out by daylight, so they proceeded with due caution. When half-way along the lane they saw, to their dismay, a man coming their way, so they quickly (and 'possums can, when necessary, do things quickly) took cover by creeping in between the stones of the loosely constructed wall that edged the lane. They heard the man pass and allowed a reasonable time to elapse before coming out. They could hear the heavy footsteps fading away in the distance, so once more they resumed their way to the farmyard.

On arriving there 'Possum One went ahead, as he evidently knew the way, on past the corn-stack and the various outbuildings, past the corn-crib and finally to the small hen-house. Everything seemed very quiet, too quiet, indeed, but therefore all the safer. While 'Possum Two, thinking to obtain a better view of the surroundings, climbed up the snake fence which led him to the roof of the hen-house. Then the two would-be thieves entered, one by the window and the other by the door, but the building was empty of hens. This was unexpected, so out came the two prowlers, disappointment showing in their dejected appearance. If only the hens had been there it would have been a fine opportunity to secure one apiece and get away without being discovered.



"So out came the two prowlers, disappointment showing in their dejected appearance."

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While making up their minds whether or not it would be advisable to hide in the hen-house and await the coming of its regular inmates they heard the shutting of a door at the near-by farmhouse, and this disturbed their sense of security. 'Possum One, on coming out of the door, scrambled quickly on to the roof while 'Possum Two climbed up to the window. Danger signals sounded loudly on the ground, as a man came walking down the pathway. At this moment the 'possums made a foolish mistake, for the man would probably have passed without noticing them, had they not both snarled, and thereby attracted his attention.

Now it happened that the man was not an American, and in that accidental fact lay the 'possums' one chance of escape. Had he been a farmer belonging to the country he would have picked up a broken fence rail and with it promptly ended the lives of the 'darned little varmints', who, even if they were thieves, stole only that they might live, and had discovered that domestic poultry are not only easy to kill but also extremely good to eat. But the man was an Irishman lately landed from the Emerald Isle. Naturally enough he had never seen or even heard of such an animal as a 'possum, consequently he could not possibly know anything about their peculiar ways. Only a week before he had arrived, and had been engaged immediately as a farm hand, at a wage that seemed to him absurdly and gratifyingly large.

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On this particular day he had been left to take care of the place while the farmer and his sons had gone to the polls to vote, for it was election day, hence the unusual quiet of the neighbourhood which had, in a measure, lulled our two marsupials into a foolish sense of security and resulted in their visit to the hen-house before the protecting darkness had fallen on the land.

Now when Dennis O'Connor, for that was the man's name, and needless to say he was proud of it, saw the two strange beasts his surprise was very great, and he rubbed his eyes to make sure that he was not dreaming. No, there was no doubt at all that what he saw were really in the flesh and not creatures of his imagination, and after giving utterance to a few vigorous remarks, which are best left out of print—for, after all, they have no direct bearing on this story—he turned, brave man though he considered himself to be, and made straight for the house at full run.

He remembered having noticed a gun standing against the wall near the chimney corner. To get possession of this gun was his chief thought, for, with such a weapon, he feared no animal under the size of a dog. That is, of course, if it chanced to be loaded, otherwise he would try to forget that he had ever seen the unbelievable creatures that had snarled at him in such a menacing way. Arriving at the house he convinced himself, by a quick examination, that both barrels of the gun were properly loaded and ready for



'Possum One—scrambled on to the roof.

action. Luck was with him, and he gave a muttered thanks to his Creator for thus watching over his safety. Without wasting time he hurried back to do heroic battle against the two defenceless silver-haired animals.

When Dennis had left so precipitously the two 'possums could scarcely believe in their good fortune. Death had seemed not only inevitable, but horribly near. There was only one thing to do under the circumstances and that was to take advantage of the unexpected opportunity and get away while the getting away was possible. No sooner, therefore, was Dennis out of sight than the surprised creatures scurried along as fast as their short legs would carry them to the apple orchard, which was scarcely fifty yards away. On arriving there each one proceeded to climb a tree. In his excitement and haste 'Possum One selected a tree so small that it afforded him no hiding-place. On the thin branches he would be dangerously conspicuous. It was a case of more haste and less speed, as he must perforce come down again, and that he did in the quickest possible time, clinging to the tree with his naked, prehensile tail as he partly slid and partly climbed down. Once on the ground he made directly for the nearest large tree, which, as bad luck would have it, happened to be the one chosen by 'Possum Two.

Here, then, was still another to add to the growing list of mistakes, and like the proverbial drop that overflowed the equally proverbial bucket, it proved the

undoing of their otherwise successful retreat. One 'possum might hide in an apple tree with a good chance of remaining undiscovered, because of his colour, which is not so very different from the rough silver-grey bark of the tree, but two could scarcely hope to find satisfactory places of concealment in the same tree. It would be asking too much to expect it. So thought 'Possum Two as he sat on a large protruding knob on the side of the trunk, a very comfortable place it was and about eight or nine feet clear of the ground. It was therefore with a feeling of disgust that he heard the scratching sounds of his would-be companion in crime as he began to ascend. Nearer and nearer he came until his nose was visible over the edge of the large knob, less than a foot away. Up till that moment not a word had been said, but this close proximity, which showed an evident intention on the part of 'Possum One to share the knob with his friend, was too much of a tax on any animal's good nature. The two together would have been as conspicuous as a bumble-bee on the end of a man's nose. If they kept on separate trees they had a good chance to escape detection in case the man did come to look for them. And anyhow why, when there was the whole orchard at their disposal, should they both try to hide on the same tree? The idea that misery likes company is all very well, but why court the misery; why, in fact, beg the man to come and find them? If the exceedingly



..So thought Possum Two as he sat on a large protruding knob on the side of the trunk."



"Nearer and nearer he came, until his nose was visible over the edge of the large knob, less than a foot away."

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unpopular Dennis should decide to visit the orchard he might of course discover one of the hidden animals, and even kill that one and be content with his effort. If so, at least one would live to carry on the pleasant task of eating chickens. All of which is by way of explanation of 'Possum Two's foolish behaviour, for he snarled, not once, but many times, and in the quiet of the late afternoon the snarls sounded very loud.

When Dennis O'Connor, fully armed with the double-barrel shot-gun and equally fully armed with a self-conscious bravery, made his rapid way back to the hen-house, he was very much surprised to find it completely devoid of any strange animals. In vain did he examine every nook and corner, in a cautious way, of course, for his bravery was by no means of the unlimited variety. But the search revealed nothing and he scratched his head and wondered where the ferocious animals had gone. Looking about he noted the apple orchard, perhaps they were there, though he was not at all sure that such creatures could climb trees.

Scarcely had he entered the orchard than a strangely familiar sound greeted his ears, for it was at this particular moment that 'Possum Two was telling 'Possum One exactly what he thought of him. If Dennis had been unarmed he would probably have fled, because unknown dangers struck terror to his timid soul, but having the gun made all the difference. In a moment

he caught sight of the two animals and noted that their heads were very close together, which was most fortunate, as he might, if he was lucky, kill the two with one shot. With this cheering thought he took careful aim, but he was suffering from keen excitement, for he had never before shot any animal and the wretched gun wobbled in a most disconcerting way. He evidently needed a rest for the unsteady weapon, so he moved a few yards and held the gun against a convenient tree, took aim, shut his eyes, both of them, and gave a vigorous pull on the trigger; so vigorous was this pull that the two barrels were fired simultaneously and Dennis was nearly knocked backwards by the force of the 'kick'. The shots had struck the tree a foot or two above the 'possums' heads, and splintered the bark in all directions. A single pellet had struck 'Possum Two's face; it smarted but did no serious damage. Something must be done and done quickly, so the little animals, with two heads that thought as one, decided to 'die' and at the same moment they both fell to the ground and remained completely motionless.

Dennis, recovering from the terrible impact of the double shot, opened his eyes as he rubbed his bruised cheek and was just in time to see the two 'possums fall to the ground at the foot of the apple tree. "Glory be to Heaven," he remarked with pride, "but isn't it the grand shot that I am, so I am; now it isn't ivery man that could kill two strange bastes with the one shot,

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and a terrible powerful shot it was, I'm thinking." As there was a possibility that they might only be wounded, he approached with due caution noting, as he started, that both the hammers of the gun were down. So in order to be ready in case of attack he cocked the left one again. Then a suspicion entered his mind and he opened the breach and discovered to his dismay that both cartridges had been fired. This was very disconcerting, for now, though he had a gun, it was of no use, unless it could be employed as a club, a thought that gave him but small consolation. For him to club a dangerous wild animal meant that he must be close to it, the very suggestion of which caused a cold shiver to trickle down his spine. The life of a farmer in this wild land evidently had its drawbacks and he resolved to take immediate steps to see if it would not be possible to get into the police force in New York. He had a third cousin who was an 'Officer' and perhaps he would help him. In the meantime he stood still and kept both eyes on the two 'possums and then, as they showed not the least sign of life, he plucked up courage and slowly, *very* slowly, walked forward. At last he stood over them, and feeling brave again, actually ventured to move one with his heavy hob-nail boot. "Shure, but they're as d'id as nails," he exclaimed to himself with a pleasing glow of satisfaction and pride. He even bent down and picked up one by the tail, in a most gingerly way,

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of course, and equally, of course, he selected the one on which there was blood. In his excitement he scarcely observed that the other 'possum showed no mark of having been shot; that, however, was a detail altogether too trivial to worry about. Enough for him that the two animals were dead, and he himself entirely responsible for their slaughter; and he turned to lay his gun against a tree that he might light his pipe preparatory to carrying the bodies back to the house.

As he stood still, trying to light his short clay pipe, his back was towards his victims. Everything was so quiet that 'Possum Two imagined that the enemy had departed and so, without changing his position, he opened his small dark eyes, closing them again instantly when he discovered the broad back of the man between him and the sky.

It had been a close shave, for at that very moment Dennis, his pipe lighted and sending forth a mighty volume of evil-smelling smoke, picked up his gun, turned and catching hold of the two 'possums by their naked rat-like tails, took his way to the house. Once there, he threw the two 'dead' animals on to the steps and, leaving them, he turned and walked towards the gate, for he heard the sounds of the farmer returning.

Round a bend in the lane came a two-seated buck-board, mud-bespattered and rickety (this having been in the days before the advent of the ubiquitous motor-



"Possum Two imagined that the enemy had departed and so—he opened his small dark eyes."
(These animals are both alive but are feigning death—i.e., "playing possum.")

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car) and in it sat the farmer, one Josephus Greely, with his wife, Martha, and two sons, Jonathan and Matthew. Dennis tried his utmost to hide all traces of excitement, but it was no use. His impulsive Irish nature would not be denied and before he realized what he was doing he rushed up to where the family were unloading themselves and almost bursting with pride blurted out the story of his mighty deed of valour, finishing up with: "An' the two queer bastes that oi hev kilt, ye should just see them, for niver in all yer loife did yis iver see anything the likes of thim and faith, though ye'll not be belaving me, I kilt the two of thim with only the one shot from the fowlin' pace, and glory be but the divil a move did either of them make afther I pulled the trigger."

The farmer and his sons wondered what on earth Dennis could have shot and asked for further particulars as to size and so forth. To which came the reply:

"Shure an' I don't know in the laste what sort of critturs they are at all, at all, but they're as big as dogs" (he failed to specify what breed of dogs, whether toy terriers or great Danes!), "aye and as cross as the very old boy himself. Ye should have heard the growls they lit out. I tell yis all that, true as I'm standing here, I thought they'd murder me. It's thankful that I am that I learned how to use a fowlin' pace before I lift the ould country. If I hadn't, I moight be d'id now while we're talking."

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The result of all this eloquence left the family as wise as they were before, so it was suggested that they had better be shown the animals that had so nearly killed the new farm-hand.

"Come along now thin," said Dennis, "an' oi'll show yiz the bastes, I lift thim on the shteps fornint the house."

Proudly he led the family towards the proof of his story of valour and as they came to within a few yards of the house he pointed exultingly to the steps saying:

"There they——"

But he got no further for there was no sign of any animal alive or dead, large or small. Dennis, utterly bewildered, stared at the bare, empty steps. It was unbelievable. They *must* be there, for had he not put them both on the lower step with his own hands, only a few minutes before. He rubbed his eyes, he scratched his head, but still no animals appeared. Suddenly Matthew the younger son burst out laughing, much to the indignation of poor Dennis. Out of the sounds of mirth came the explanation. "Dennis, you poor boob, your terrible wild animals were 'possums, I'll bet a dollar, and they were no more dead than you are and not half as foolish as you."

It was many months before Dennis could be persuaded to give up his belief that someone, or something, had stolen his 'possums. Needless to say, he never saw them again, for they had gone far away from the

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temptation of a certain particular hen-roost, the neighbourhood had lost all charm for them. They had no craving for such excitement as they had experienced. Dame Fortune had been exceptionally kind, but it would not do to run any further risk.

To Dennis O'Connor, recently come from Ireland, the very mention of 'Playing 'possum' is and always will be a sore point. This story shows that the apparently ridiculous habit of pretending to be dead may, on occasion, prove a means of avoiding death itself. Many creatures feign injury as a method of protection for themselves or their young, others again believe in immobility, but so far as I know, the only animal that makes a perfect pretence of being dead is the humble American opossum.

